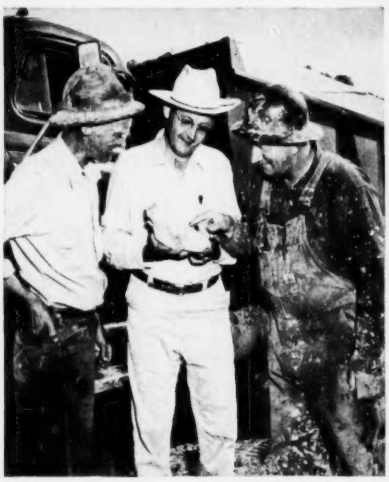
# Chemical Week

May 24, 1952 Price 35 cents



Chemical makers battle to thwart tariff slash . . . . . p. 17

Researchers close in on tough-nut problem: continuous dyeing of synthetic fibers . . . . . p. 25

Tough haul, no tracks, plenty of trucks; that's key to winning uranium . . . . . p. 32

Soil conditioners: hottest thing in ag chemicals sparks rough legal, sales tussle . . . . . p. 39

Salesmen swap sales-getting ideas, gear up for broader-gauge job . . . . . p. 53

A McGRAW-HILL PUBLICATION

# NYTRON

TRADE-MARK REG. U. S. PAT. OFF.

## improves the performance of

- ✓ Phosphates
- ✓ Silicates
- ✓ Caustic and other Sodas
- ✓ Soaps
- ✓ Acids

NYTRON will improve the performance of most processes using solutions of phosphates, silicates, acids, soaps, caustic soda, soda ash and similar materials. In industries as varied as textile manufacturing and steel pickling, laundering and dairy cleaning, NYTRON has found such unique applications because *no other wetting agent-detergent matches* NYTRON'S *combination of properties!*

Examine this unusual combination of properties! When used in combination with other materials—or used alone—NYTRON provides faster wetting . . . better penetration . . . more thorough rinsing . . . improved detergency! Find out how NYTRON can help you get improved performance too!

### Detergency

It is effective on an unusually wide variety of soils. NYTRON has excellent power to remove oil and grease from fabrics, surfaces, metal parts. It cleans efficiently in cold, as well as warm or hot water and retains its detergent action when used in either acid or alkaline mediums.

### Hard Water Action

NYTRON is more economical because increased quantities do not have to be added to compensate for water hardness; completely prevents the formation of scum, grease rings, streaks, spots.

### Chemical Stability

Remains chemically stable over a wide range of temperatures, acidity or alkalinity.

### Rapid Solubility

NYTRON goes into solution almost instantly in hot or cold water and will not "salt out" in concentrated solutions of many acids, alkalies or metallic salts.

### Quick, Thorough Rinsing

NYTRON rinses promptly and completely in cool or even cold water, does not leave an insoluble deposit.

### Reduced Wetting Time

Effectively lowers surface tension, even in extremely low concentrations. It improves the action of acid and alkaline solutions over a wide range of temperatures.

### Foaming

NYTRON will foam in any normal concentration of acid or alkali, in distilled water or sea water, in ice cold or boiling water.

### Improves Performance of Soap

Improves quality when used to partially or completely replace soap.

**Mail Coupon for FREE Sample!**

A SOLVAY PRODUCT

**SOLVAY SALES DIVISION,** Allied Chemical & Dye Corporation, 40 Rector Street, New York 6, N. Y.

I want to see for myself how NYTRON improves performance. Please send me a free sample plus non-technical information and specific technical data on this Synthetic Organic Detergent with the exclusive combination of properties.

Name_____

Title_____

Company_____

Address_____

City_____ Zone____ State_____ CI-5

Chemical Week

Volume 70 Number 21

May 24, 1952

| | |
|---|---|
| OPINION | 2 |
| NEWSLETTER | 7 |
| BUSINESS & INDUSTRY | 11 |
| RESEARCH | 25 |
| PRODUCTION | 32 |
| SPECIALTIES | 39 |
| BOOKS | 47 |
| MEETINGS | 47 |
| DISTRIBUTION | 53 |
| MARKETS | 57 |
| BOOKLETS | 64 |

PUBLISHER ..... Wallace F. Traendly
EDITORIAL DIRECTOR .... S. D. Kirkpatrick
EDITOR ..... W. Alec Jordan
MANAGING EDITOR .. Howard C. E. Johnson
ASSOCIATE EDITOR ..... John J. Craig

ASSISTANT EDITORS: Donald P. Burke, George F. Foy, Dennis J. Lynds, William Olcott, Anthony J. Piombino, Ralph R. Schulz, E. L. Van Deusen. REGIONAL EDITORS: Frank C. Byrnes, Chicago; John Kent, Washington; James A. Lee, Houston; Elliot Schrier, San Francisco. ART EDITOR: Woodfin G. Mizell, Jr. EDITORIAL ASSISTANTS: Claire Baker, Leona Mahler, J. R. Warren. DOMESTIC AND FOREIGN NEWS SERVICE: McGraw-Hill Bureaus in principal cities of the U.S. and throughout the world. CONSULTING EDITORS: Lawrence W. Bass, Benjamin T. Brooks, John V. N. Dorr, Charles R. Downs, Ernest W. Reid, Norman A. Shepard, Roland P. Soule, Robert L. Taylor. BUSINESS STAFF & REGIONAL OFFICES: See page facing back cover.

Chemical Week (including Chemical Specialties, and Chemical Industries) is published weekly by McGraw-Hill Publishing Company, Inc., James H. McGraw (1860-1948), Founder. Publication Office: 1309 Noble St., Philadelphia 23, Pa.

Executive, Editorial and Advertising Offices: McGraw-Hill Building, 330 W. 42nd St., New York 36, N. Y. Curtis W. McGraw, President; Willard Chevalier, Executive Vice-President; Joseph A. Gerardi, Vice-President and Treasurer; John J. Cooke, Secretary; Paul Montgomery, Senior Vice-President, Publications Division; Ralph B. Smith, Editorial Director; Nelson Bond, Vice-President and Director of Advertising; J. E. Blackburn, Jr., Vice-President and Director of Circulation.

Subscriptions to Chemical Week are solicited in the chemical and process industries from management men in administration, research, production and distribution. Position and company connection must be indicated on subscription order. Address all subscription communications to Chemical Week Subscription Service, 1309 Noble St., Philadelphia 23, Pa., or 330 W. 42nd St., New York 36, N. Y. Allow ten days for change of address.

Single copies 35¢. Subscription rates—United States and Possessions $5.00 a year; $8.00 for two years; $10.00 for three years. Canada $6.00 for a year; $10.00 for two years; $12.00 for three years. Other Western Hemisphere Countries $15.00 a year; $25.00 for two years; $30.00 for three years. All other countries $25.00 a year; $40.00 for two years; $50.00 for three years. Entered as second class matter December 20, 1951, at the Post Office at Philadelphia 23, Pa., under the Act of March 3, 1879. Printed in U.S.A. Copyright 1952 by McGraw-Hill Publishing Co., Inc.—All Rights Reserved.

NEW PRODUCTS?

SURVEY

*The Possibilities of Developing*

NEW PRODUCTS

through the versatility of

THE KEY TO HARCHEM® BETTER PLASTICS

SEBACIC ACID

*For Information Write:*

HARDESTY CHEMICAL COMPANY, INC.

HARCHEM

41 EAST 42nd ST. NEW YORK 17, N. Y.

Canadian Distributor: W. C. Hardesty Co. of Canada Ltd., 975 Lakeshore Road, New Toronto, Canada

if you manufacture a wax product...

Petrolite microcrystalline WAXES can save you money

HERE ARE FOUR WAYS TO PROFIT FROM THE USE OF PETROLITE WAXES

1 Take advantage of the purity, high melting point, hardness, high gloss, low tack, non-blocking characteristics and ease of emulsification in improving your product to gain a competitive advantage.

2 Extend the use of high-priced vegetable waxes by adding one of the Petrolite family to your formulation. Petrolite waxes are highly compatible, making them ideally suited to use as extenders.

3 Replace costly vegetable waxes completely with Petrolite wax. Many manufacturers have done this, gaining a substantial production cost advantage.

4 Send for samples, technical booklets and price lists. It will pay you to have complete information on Petrolite waxes.

*Warehouse stocks of Petrolite wax are carried in Jersey City, New Jersey; Chicago, Illinois; Los Angeles, California and Kilgore, Texas.*

PETROLITE CROWN WAXES

PETROLITE CORPORATION
Wax Division
30 BROAD STREET, NEW YORK 4, NEW YORK
BOX 390, KILGORE, TEXAS

WS2/3-2

# OPINION . . . . .

## Soil Science Neglected

To THE EDITOR: I have read with great interest the article in your May 10th edition on "Solid Ground for Progress" . . . you say, in part: "Here's the true nature of the problem, one logical approach to its solution." The article starts with the chrome-lignin process . . . and subsequently presents the two Cornell workers' view on the entire field of soil stabilization.

Profs. Hough and Smith have certainly developed a most important new soil stabilization process . . . no fault can be found with their views concerning the entire field of soil stabilization. If this is all the article wanted to convey, then it has done its job. If, however, the article was intended to present a well-rounded picture of the actual status of the science of soil stabilization, then it must be found wanting.

. . . During the last twenty-five years soil stabilization has developed into a science . . . at present the science . . . is considerably ahead of its application in soil engineering. The first comprehensive exposition of this science is in Jerome Alexander's, "Colloid Chemistry," V, . . . chapter on "Principles and Practice of Soil Stabilization."

As a clearing house for this science serves the Highway Research Board Committee on "Physico-Chemical Properties of Soils" which counts among its members such well-known chemists as George L. Clark, Prof. of Physical Chemistry, Univ. of Illinois; Henry Eyring, Dean of the Graduate School of the University of Utah; and Ernst A. Hanser, Prof. of Colloid Chemistry, M. I. T.

. . . The science of soil stabilization leans heavily on and is supported by a large number of previously developed sciences . . . such as: (1) pedology: the science of soil formation and general soil properties as functions of climate, parent material, topography, organisms and time; (2) surface chemistry; (3) microbiology; (4) the theory of resistance and durability of non-metallic construction materials (collameritics); (5) inorganic and organic chemistry; (6) physics.

To mention only a few achievements, this science has to its credit:

(1) The elucidation of physical, chemical, and microbiological factors of importance in granular, bituminous, Portland cement, and other types of stabilization which permit application of these methods to soil types and climates . . .

(2) Development of highly active waterproofing agents for treatment of . . . earth surfaces of military importance.

(3) Development of the Navy's aniline-furfural beach stabilization process.

. . . It has stimulated the engineering discipline of soil machines . . . the theory of non-metallic construction materials.

So far, the bulk of the bill for developing soil stabilization has been footed by state highway departments . . . The Defense Dept. has [recently] financed . . . research with more or less success depending on the wisdom with which contractors were selected.

With few notable exceptions . . . the chemical industry shied away from investing in soil stabilization research for reasons which probably varied from company to company. The most important ones were probably that such real fundamental research is quite expensive because of the complexity and variability of soil systems, and . . . under normal economic conditions, soil stabilizing agents must compete with low-priced bitumen and Portland cement . . .

The recent show of interest on the part of the chemical industry may be traced directly to stimulation by the Defense Department. Leaving aside garden soil conditioners such as Krilium, quickies offered for soil stabilization may do well financially while the military emergency lasts but will probably not be able to compete under normal conditions . . .

Of different type is the interest of Imperial Chemical [Industries], which entered the field . . . several years ago for the purpose of building low-cost roads in colonial and other underdeveloped areas . . . expects to profit from increased sale of fertilizers in these areas rather than from the sale of stabilizers . . .

The science . . . in its most advanced form was developed in the U. S.; however for reasons which probably arise from our national temperament . . . our educational, professional and business policies, the importance and the fundamental concepts . . . are better understood in Europe, South America, Africa, and Asia . . . The most recent comprehensive statements of this U. S. science are published in French and in German, rather than in our own language . . .

In the noise and scramble of the market place . . . the real pioneers of soil stabilization, mostly connected with state and federal highway organizations are being forgotten, while

HOOKER CHEMICALS®

*Chooses*

# OUTSTATE MICHIGAN

Another of America's great chemical producers — Hooker Electrochemical Company — has decided to take advantage of the outstanding benefits offered by Outstate Michigan.

It has announced that it will build a modern chemical plant at Montague, Michigan. The site is on White Lake, which opens into Lake Michigan. This new plant, supplementing Hooker's present plants in Niagara Falls, N. Y., and Tacoma, Wash., will supply chemicals to the industrial Midwest.

Said President R. L. Murray:

"From a distribution point of view, the White Lake site is an excellent location. It also affords deep-water transportation, which is important to a modern chemical plant of this type."

A vast bed of underground salt was a factor in selection of the site, since Hooker Chemicals are produced "From the Salt of the Earth."

Hooker's many chemical products, including chlorine, caustic soda and hydrogen, are used by more than 30 different industries.

Hooker Chemicals are important to paints and varnishes, metals, disinfectants, food and beverages, water purification, petroleum and lubricants, rubber, pulp and paper, perfumes and cosmetics, pharmaceuticals, weed killers, insecticides, leather, plastics, rayon and cotton goods, dye-stuffs and colors, soaps and detergents.

Outstate Michigan has been recognized for many years as an exceptionally good location for chemical plants, for industries that use large volumes of chemical products, for manufacturers or processors of almost any kind.

If you are looking for a plant location, we invite you to make use of our confidential free service. Call, wire or write today.

*Check These Advantages of Outstate Michigan*

★ Exceptionally High Percentage of Skilled Workers ★ In the Great Market Center of America
★ Wide Range of Materials, Parts and Supplies ★ Diversified Industries ★ No State Income Tax
★ Desirable Plants and Plant Sites ★ Dependable Electric and Gas Service at Low Rates
★ Excellent Living Conditions and Cultural Opportunities
★ Woods, Lakes and Streams That Make This a Foremost Vacation Area

Black area on map shows territory served by Consumers Power Company

N-28-CW

FOR INFORMATION CONTACT INDUSTRIAL DEVELOPMENT DEPT.

**CONSUMERS POWER COMPANY**
JACKSON, MICHIGAN

USE — "CELLOSOLVE" ACETATE
(Ethylene Glycol Monoethyl Ether Acetate)

• As a slow solvent for spraying and brushing lacquers. CELLOSOLVE Acetate is an outstanding flow promoter, improves blush resistance, and has a mild odor.

Toluol Dilution Ratio (½ sec. Nitrocellulose): 2.5

• Outstanding for use in hot spray lacquers.

• As a secondary coolant in contact with ammonia or other heat exchangers, where its low freezing point (−61.7°C.) and low viscosity are advantageous.

• Call or write the nearest of CARBIDE'S 20 offices. Ask for a sample of CELLOSOLVE Acetate, technical data, and prices.

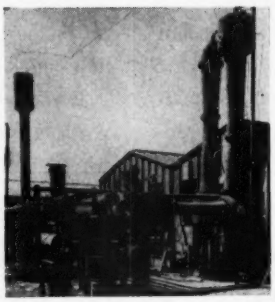
"Cellosolve" is a registered trade-mark of Union Carbide and Carbon Corporation

CARBIDE AND CARBON CHEMICALS COMPANY
A Division of
Union Carbide and Carbon Corporation
UCC

30 E. 42nd St., New York 17, N.Y. Offices in Principal Cities
In Canada: Carbide and Carbon Chemicals, Limited, Toronto

STRATOSPHERE PRESSURES DUPLICATED

**U. S. Government Research maintains a wind tunnel at the University of California for testing parts of airplanes and rockets. In this tunnel, altitudes up to 75 miles in the stratosphere are duplicated by a five stage Evactor, a steam jet vacuum-producing unit designed and built by Croll-Reynolds to work in the range of a few microns of mercury absolute.**



**Croll-Reynolds five-stage Evactors are built in various sizes, the smallest of which handles many times the volume of the largest mechanical vacuum pump. The same careful work and precision which produced these five-stage units goes into every C-R Evactor from the one-stager yielding a pressure of four or five inches of mercury absolute to the four-stage unit designed for work in the range of 0.15 to 3.0 mm. of mercury absolute.**

**Many thousands of Croll-Reynolds Evactors are in regular operation, some of them for over 30 years. They are installed in every state of the U.S. and in many foreign countries. Let our technical staff help you with your vacuum problems, including flash cooling of water and aqueous solutions.**

CROLL-REYNOLDS CO., INC.
Main Office: 751 Central Avenue, Westfield, New Jersey
17 John Street, New York 38, N. Y.
CHILL-VACTORS STEAM JET EVACTORS CONDENSING EQUIPMENT

## OPINION . . . . . .

the fruits of their work are freely used . . .

Will the chemical industry exploit chemical soil stabilization in a way that it will disgust the real pioneers in the field and kill their interest? Will a mass-production civilization prove in the end, as deadly to scientific pioneering and creative thinking as political totalitarian regimes?

. . . It may be of interest to quote from the foreword of a collection of papers on soil stabilization published in book form by the Russian government in 1938 . . . written by A. M. Melikian, acting director of the "Soviet Scientific Highway Research Institute." "[We are] giving greatest emphasis this year to soil stabilization. The problem is of large scope . . . great importance . . ."

. . . The Russian workers were well aware in 1938 of the existence or need for the existence of a science of soil stabilization. In the U. S. one runs the danger of ridicule even now if one refers to the science . . .

I apologize for the length of this letter; however, as a cover-to-cover reader of your excellent magazine I felt that you would appreciate the information contained in this letter . . .

HANS F. WINTERKORN
Chairman
Committee on Physico-Chemical
Properties of Soils Highway
Research Board

### Don't Add 'Em

TO THE EDITOR: In your story on loss of coal chemical production due to strikes (May 10) someone's finger slipped on the adding machine, insofar as benzene is concerned.

At least I don't *believe* 712,500 and 1,968,000 add up to 2,845,000.

R. M. SIMPSON
Pittsburgh, Pa.

*Add they don't, Reader Simpson, but it was no slip of a finger or stripped cog on the adding machine. CW reported two not-to-be-added figures: nitration (1°) grade: 712,500 gals; industrial (2°) grade: 1,968,000 gals. Total benzene — which includes those and other grades 2,845,000 gals.*— ED.

CW welcomes expressions of opinion from readers. The only requirements: that they be pertinent, as brief as possible.

Address all correspondence to: The Editor, Chemical Week, 330 W. 42nd St., New York 36, N. Y.

ADVERTISEMENT—*This entire page is a paid advertisement* *Prepared by U. S. Industrial Chemicals Co.*

# U.S.I. CHEMICAL NEWS

May 24 ★ A Series for Chemists and Executives of the Solvents and Chemical Consuming Industries ★ 1952

## ATTENTION

### U.S.I. Announces Change Of Head Office Address

U. S. Industrial Chemicals Co., Division of National Distillers Products Corporation, has announced the relocation of its head office, formerly at 60 East 42nd Street, New York 17, N. Y. The new address is 120 Broadway, New York 5, N. Y. Telephone number of the new office is WOrth 4-3000. The move does not affect the address of U.S.I.'s New York Sales Division offices, which remain at 33 West 42nd Street, New York 18, N. Y., where the telephone number is BRyant 9-5200.

## *New Analytical Device Even Types Up Results*

A laboratory instrument that can make a complete molecular analysis of a 20-component hydrocarbon mixture in 10 minutes, and then type out the results on a paper tape was described at a recent analytical chemistry conference. Made by hooking together a mass spectrometer and an electronic computer, the new device contains a specially developed selector which codifies the output of the spectrometer into a form which can be fed directly into a digital computer. The latter then solves the equations necessary to determine the exact quantities of the various components in the mixture. Previously, readings of the spectrometer were either calculated by hand or fed into a simultaneous equation computer to obtain the results. A simple mechanical arrangement allows the results from the computer of the new instrument to be reproduced in typewritten form, it is said. Time required for a complete analysis is claimed to be about one-tenth of that required for the most rapid previous methods, and only one operator is needed to run the instrument. One such instrument is now in operation, and the design will be made available after further testing, according to the company.

## Food for Thought

Given a little more time, nutritionists should one day be able to de-flavorize cold mutton, add a pinch of powder, and make it come out lobster thermidor, according to recent observations of a bio-chemist. Perception of flavor, he says, depends upon taste and smell—senses that function like an efficient laboratory because they can identify in a fraction of a second compounds it would take a chemist days to analyze. Science has learned that taste and smell of most things come from minute amounts of closely associated chemical substances. Some of these essences have been successfully extracted, and many of them can be duplicated in the laboratory. In addition, chemists have determined the nature of the molecules to which the senses respond and are now able to design a few tastes and aromas at will, according to this authority.

# U.S.I. Develops Superior Resin For Interior-Type Lacquers

### Arochem 542 Surpasses Conventional Maleics In Resistance to Cold Checking, Print Resistance; Formulations Are Much Easier to Sand and Rub

A new resin which gives the manufacturer of furniture lacquers *all* of the properties he needs for the production of superior finishes is now in volume production at U.S.I. A recent development of U.S.I.'s resin laboratory, AROCHEM 542 is a modified maleic which imparts both hardness and excellent cold check resistance to its formulations, making it an ideal resin for use in all interior-type lacquer finishes. It is particularly well suited for furniture sealers and finish coats.

Conventional maleic resins have been found satisfactory in most respects for interior lacquers. They generally permit the formulation of fast drying, good sanding and good rubbing products with high print resistance. However, to attain these properties, considerable sacrifice must be made in resistance to cold checking. The ratio of short oil, non-oxidizing alkyds to maleics is often increased in lacquer formulations to overcome the cold checking properties, but the ease of sanding and rubbing, fast drying, print-resistant qualities are often reduced to some extent as a result.

MORE

## Find Vitamin $B_{12}$ Controls Utilization of Vitamin A

Past work in connection with the U.S.P. vitamin A animal assay diet has indicated that vitamin $B_{12}$ may have some interrelationship with vitamin A in the body. New research at a leading university has demonstrated that vitamin $B_{12}$ can increase storage of vitamin A in the body. Results of tests with animals showed that vitamin $B_{12}$ given every other day by intramuscular injection caused a 40 per cent increase in the amount of vitamin A deposited in the liver and kidneys of animals receiving carotene in their rations. When it was administered orally, vitamin $B_{12}$ increased vitamin A storage derived from carotene by 26 per cent.

U.S.I. is a major producer of primary fermentation vitamin $B_{12}$ feed supplements which have been shown to cause an even greater growth response than pure vitamin $B_{12}$. These supplements are among the best available for use by feed manufacturers in poultry, turkey, hog, and calf rations.

## *Rare Earth Metals Not So Rare Any More*

Interest in the rare earth elements is undergoing a revival as one of the results of the atomic energy program, according to a recent report. These elements make up an appreciable fraction of the fission products of atomic piles, it is said, and one phase of their study has been the successful production of kilogram quantities of several of the rare earths in the pure state. The method used involves reducing the anhydrous rare earth chlorides with calcium in a refractory oxide-lined container. Iodine is added to the reaction mixture, and by its highly exothermic reaction with calcium liberates sufficient heat to give a well-fused mass of the product metal. Vacuum remelting removes all but trace amounts of calcium. Quantities of lanthanum, cerium, praseodymium, and neodymium have been produced in this manner, all with purities greater than 99.7 per cent. Because of their unique similarity, pure rare earth metals are valuable in the study of other metals and of the relationships between their properties and their electronic structures.

## Vinyl Paint Systems Described in New Booklet

A bulletin recently offered to the public describes the characteristics and application methods of a vinyl base plastic paint which is claimed to give protection against marine atmospheres, tropical climates, chemicals, abrasive action, salt water corrosion, and similar conditions. The bulletin explains the systems used for painting metals, concrete, brick, stone, plaster, and asbestos board, and outlines uses of the coating in such industries as chemical processing, food and dairy, public utilities, petroleum, marine and railroads.

CONTINUED

## *Superior Resin*

### AROCHEM 542 Solves the Problem

AROCHEM 542 eliminates the need for a compromise between these two sets of properties. Used as a direct replacement for the maleic resin component in lacquers, it contributes greater ease of sanding and rubbing even though it has a lower melting point. The relatively low melting point of this unusual resin is not indicative of the excellent hardness it imparts to finishes.

The resistance of AROCHEM 542 to cold checking is also vastly superior to that of conventional maleics. For example, cold check tests on a typical furniture finishing system, films of which were aged one month, showed that AROCHEM 542 systems passed 10 to 15 cycles while conventional maleic resin lacquers failed in 2 to 4 cycles. In addition, maleic-alkyd combinations, adjusted to have cold check resistance comparable to that of AROCHEM 542 lacquers, were definitely inferior to the latter in speed of setting, ease of sanding and rubbing, and print resistance. AROCHEM 542 lacquers have been found to be equivalent to their maleic counterparts in color and color retention as well as in resistance to solvents, alcohols, and rubbing compounds.

### SPECIFICATIONS — AROCHEM 542

Melting Point (Mercury Method) . 100-108° C.
Acid Value . . . . . 20-30
Color (Gardner Stds. '33, 60% in Toluol) . . . . . 10 Max.
Sp. Gr. (Approx. range @ 25° C.) . . 1.13-1.18
Solubility . . . . Completely soluble in aromatic, ester, ketone, and other usual lacquer solvents. Insol. in aliphatic solvents.

## New Pump Revealed

Invention of an industrial pump which operates by vibration instead of rotation was revealed recently. Said to be especially suited for use in the chemical, oil, and food industries, the pump contains no packing and does not require any lubrication.

## New Chemical from Trees May Replace Gum Arabic

A gum-type substance obtained from larch trees which grow profusely in parts of the Northwest is seen as a significant discovery which may replace gum arabic, according to a recent announcement. Gum arabic, used as an adhesive agent in pills, candy, and other dietary products, is at present imported from the middle east. Known as arabogalactan, the new substance can be produced competitively from trim ends, slabs and other waste products of the sawmill, it is said. The material is extracted chemically so that waste can be used for fuel, pulp, or other purposes after treatment. The product is described as odorless, tasteless, and instantly soluble in water.

## *Electricity, Vacuum Found To Speed Concrete Curing*

Two methods for speeding the curing time of concrete — one with vacuum and the other with electric current — were reported recently as the newest developments for improving concrete products and structures. In the first process, specially designed vacuum mats are used to remove excess mixing water from the concrete, thus inducing early hardening. Forms can be removed sooner and cast pieces can be handled several hours earlier than is possible with conventional methods, it is said.

Electrical curing of concrete originated in Japan where construction work during severe winters has been expedited by the use of electrodes placed on the surface or imbedded in the fresh concrete. The method is claimed to be adaptable to both plain and reinforced concrete.

## List Flammability Limits

A bulletin just issued by the government is said to contain the most comprehensive listing of the limits of flammability of gases and vapors in air or oxygen yet made available in a single volume.

## TECHNICAL DEVELOPMENTS

*Information about manufacturers of these items may be obtained by writing U. S. I.*

**A new rust and tarnish remover** is claimed to destroy rust, to chemically clean steel, iron, aluminum, zinc, and cadmium, and to leave a phosphate coating which acts as a base for organic finishes. **(No. 799)**

**Scale models of molecules and ions,** including those that contain metal atoms, can be made with a new atom model kit with parts designed to conform with latest theories on how metals combine with inorganic and organic groups. **(No. 800)**

**Polyethylene beakers,** said to be unbreakable and completely resistant to most mineral acids, alkalies, and many organic chemicals between —20° and 150° F., are now available. **(No. 801)**

**A waxed effect on wood and furniture** can be obtained without rubbing, wiping, or shellac with a new stain which dries rapidly and does not require sanding, according to the manufacturer. **(No. 802)**

**An adhesive coating for wall-board interiors,** described as a plaster-like ready-mix, can be applied without taping seams and gives a smooth, hard, low-cost surface. **(No. 803)**

**Static electricity can be eliminated** from carpeting, photographic film, phonograph records, etc., by treatment with a new chemical product, said to bleed off static charges into the air and to be harmless. **(No. 804)**

**To eliminate glare from TV screens,** auto windshields, and other glass surfaces, a new spray-on plastic coating is packaged in an aerosol container sufficient to cover all windows of an automobile. **(No. 805)**

**A new low-cost plastic strip coating** provides excellent protection against corrosion, can be applied by brush or spray, is fast drying, and can be peeled off easily when desired, the manufacturer states. **(No. 806)**

**Ordinary cement is transformed into a fast-acting leak stopper** by a liquid chemical additive said to regulate setting time for Portland cement from 30 seconds to 30 hours and to stop leaks almost instantly without removal of hydrostatic pressure. **(No. 807)**

**A new adhesive for joining metals** also sticks to china, glass, enamelware, leather, plastics, and wood, can be used as a cold solder, and can be chiseled, planed, or sandpapered, it is said. **(No. 808)**

PRODUCTS OF U.S.I.

**ALCOHOLS**
Amyl Alcohol (Isoamyl Alcohol)
Butanol (Normal-Butyl Alcohol)
Fusel Oil—Refined
Propanol (Normal-Propyl Alcohol)

**Ethanol (Ethyl Alcohol)**
Specially Denatured—all regular and anhydrous formulas
Completely Denatured—all regular and anhydrous formulas
Pure—190 proof U.S.P., Absolute—200 Proof
Solox*—proprietary solvent—regular and anhydrous

**ANTI-FREEZE**
Super Pyro* Anti-Freeze
U.S.I. Permanent Anti-Freeze

**ETHERS**
Ethyl Ether, U.S.P.
Ethyl Ether, Absolute—A.C.S.

**ACETONE — A.C.S.**

**ANSOLS**
Ansol* M
Ansol* PR

**ACETIC ESTERS**
Amyl Acetate—Commercial and High Test
Butyl Acetate
Ethyl Acetate—all grades
Normal-Propyl Acetate

**OXALIC ESTERS**
Dibutyl Oxalate
Diethyl Oxalate

**PHTHALIC ESTERS**
Diamyl Phthalate
Dibutyl Phthalate
Diethyl Phthalate

**OTHER ESTERS**
Diatol*
Diethyl Carbonate
Ethyl Chloroformate

**RESINS (Synthetic and Natural)**
Arochem*—modified types
Arodure*—urea-formaldehyde resins
Arafene*—pure phenolics
Aroflat*—for special flat finishes
Aroflint†—room temperature curing phenolic
Araplex*—alkyds and allied materials
Aropol†—copolymer modified alkyds
Ester Gums—all types
Natural Resins—all standard grades

**INSECTICIDE MATERIALS**
CPR Concentrates: Liquid & Dust
Piperonyl Butoxide
Piperonyl Cyclonene
Pyrenone* Concentrates: Liquid & Dust
Pyrethrum Products: Liquid & Dust
Rotenone Products: Liquid & Dust

**INSECTIFUGE MATERIALS**
Indalone*
Triple-Mix Repellents

**INTERMEDIATES**
Acetoacetanilide
Acetoacet-ortho-chloroanilide
Acetoacet-ortho-toluidide
Acetoacet-para-chloroanilide
Ethyl Acetoacetate
Ethyl Benzoylacetate
Ethyl Sodium Oxalacetate

**FEED PRODUCTS**
Calcium Pantothenate (Feed Grade)
Curbay B-G*
DL-Methionine (Feed Grade)
Niacin, U.S.P.
Riboflavin Concentrates
Special Liquid Curbay*
U.S.I. Vitamin $B_{12}$ and Antibiotic Feed Supplements
Vacatone* 40

**OTHER PRODUCTS**
Collodions
Ethylene
Methionine (Pharm. Grade)
Nitrocellulose solns.
PiB*—Liquid Insulator
Special Chemicals and Solvents
Urethan, U.S.P.

*Reg. U.S. Pat. Off.
†Trademark Pending

**U.S. INDUSTRIAL CHEMICALS CO.**
*Division of National Distillers Products Corporation*

120 BROADWAY, NEW YORK 5, N. Y. BRANCHES IN ALL PRINCIPAL CITIES

## NEWSLETTER

The decree in the Big Government vs. "Big Business" case (anti-trust suit against Du Pont, ICI, etc.) wasn't issued, but Federal Court Judge Sylvester J. Ryan's opinion last week on "remedies to be applied" spells out the penalties the court has in mind for the Government's favorite target.

Quotes from the Judge's 61-page opinion:

"We have found . . . exchange of patents, processes and know-how served as direct instruments used . . . to achieve . . . unlawful purpose.

"We decree compulsory licensing . . . patent rights . . . granted the defendants were misused.

"Invoking the 'harsh remedy' of investiture . . . is . . . necessary not only to remove the opportunity and means to effect further restraints but to eliminate an incentive for the defendants not to compete."

Divestiture applies to CIL, Duperial Argentina, Duperial Brazil, but not, at present, to CSAE or CBC.

Patents later than June 30, 1950, aren't affected unless part of older patents involved in the "conspiracy." And only patents to come under the compulsory licensing decree are those involving products made by both ICI and Du Pont, or either of them and any of their jointly-owned companies.

(The Government had wanted all patents—past, present and future, involved in conspiracy or not—to come under such a ruling.)

But the Judge refused to order any royalty-free licensing of patents. Reason: It is open to question of constitutionality.

Labor tussles are making plenty of headlines. But they're spawning a raft of behind-the-scene worries too.

Oil and steel upsets have toppled a spate of production schedules, disrupted chemical markets.

Last week the oil workers made their most impressive show of united strength to date. Denied, of course, is any suggestion of industry-wide bargaining. But look at the pattern yourself.

This is the pattern chemical industry men are sizing up. And this is what they fear: Unions will drive for industry-wide recognition among chemical workers.

It's not hard to see why. Both steel and coal union leaders, whose edicts set the pace for their respective industries, are labor's noblemen. And there are many of labor's gentry who covet a close-to-the-White House role.

Right now, the chemical process industries, like the oil producers, are organized by various independent, competing-for-membership unions: District 50, United Mine Workers; International Chemical Workers (AFL); Gas, Coke and Chemical (CIO); Oil Workers themselves (CIO); and independents.

Though any amalgamation would be improbable—especially considering District 50's irrascible Denny Lewis—a common-front drive for wage and union recognition concessions is not impossible.

It won't happen tomorrow, or next week. But don't overlook the

militant Gas, Coke and Chemical Workers as potential drive sparkers.

The trouble will start when one union gets big enough to dominate the field, elbow the others out or swallow them. That's the one big reason back of the lusty membership campaigns.

There's a tussle of a different sort brewing on the chemical horizon: Another company—B. F. Goodrich Chemical—is plunging into the Krillium-engendered sodium polyacrylate business.

Long a maker of polyac solutions (and researcher on calcium acrylate soil stabilizers), Goodrich will soon offer solid polyac. It won't, however, be labelled as a "soil conditioner."

Du Pont too will add a soil conditioner to its line of garden products next month. It hasn't settled on the name or price yet, but the product will be a powder (sodium polyacrylate, also from American Cyanamid production) priced competitively. Prentiss Drug is another getting in.

Monsanto's Merloam formulation of Krilium, incidentally, went on sale in the nation's biggest department store, Macy's in New York, this week.

But expansion, not legal and labor embroilments, is what the chemical industry is famed for. And last week it had a familiar look.

In Defense Production Administration's latest approved certificates of necessity is a number of healthy chemical increases:

American Cyanamid: phthalic anhydride, $6,165,000 certified (30% rapid tax write-off); Union Carbide & Carbon: ferrosilicon, $29,108,000 (55%); phenolic resins, $5,740,000 (55%); Bethlehem Steel: coke and coal chemicals, $6,326,000 (45%); Monsanto: calcium carbide, $3,975,000 (50%); chemicals, four certificates totaling $5,153,900 (all at 45%); formaldehyde solutions, $669,000 (55%); hydrogenated products, $539,880 (60%); Blockson Chemical: sulfuric acid, $4,000,000 (70%); National Lead: sulfuric acid, $957,346 (70%); Dow: bromine brine wells, $276,500 (50%); bromine, $512,745 (50%); brine, $1,101,990 (50%); Heyden Chemical: pentaerythritol, $1,207,400 (65%); Borden: formaldehyde, $1,028,610 (55%).

Other companies getting the go-ahead from DPA include Vermont Copper (pyrrhotite sulfur), American Polymer (plastics), U. S. Rubber (Aramite), Dewey & Almy (refined isoprene), Harshaw (anhydrous hydrofluoric acid), Abbott Labs (pharmaceuticals), Allied (hydrofluoric acid), Jefferson (metal phenolates), Pacific Carbide (calcium carbide) and Commercial Solvents (formaldehyde).

Foor Machinery & Chemical has ticketed some ambitious projects for the next four years out of the proceeds of its recent issue of 300,000 shares of common (about $13 million).

About $6 million will go for phosphorus; $11.7 million for soda ash; $1.4 million for barium oxide. It will also make an additional subscription of $2.76 million to the capital stock of Intermountain Chemical, its jointly owned subsidiary.

Difference between planned expenditures and proceeds from the stock will be made up principally from depreciation funds and retained earnings.

**. . . The Editors**

TRIETHYL ORTHOFORMATE is a unique ester, closely resembling an acetal, stable in the presence of alkali, unstable in the presence of acid, and a source for the ethoxy methylene group. — Potentially valuable in new fields, this compound is now an intermediate for B-complex vitamins, anti-malarials, special polymers and polymethine dyes.

# triethyl orthoformate

$HC(OC_2H_5)_3$

**KAY-FRIES SPECIFICATIONS...**

| | |
|---|---|
| **purity** | ● 99.0% minimum |
| **specific gravity** | ● .892 — .896 at 20°/20° C. |
| **color** | ● Maximum 15 Hazen Scale |

**Typical reactions of TRIETHYL ORTHOFORMATE**

$HC(OC_2H_5)_3 + ROH \rightarrow HC(OR)_3 + 3C_2H_5OH$
Alcohol — Trialkyl (Aralkyl) Orthoformate

$HC(OC_2H_5)_3 + RR'C=O \rightarrow RR'C(OC_2H_5)_2 + HCOOC_2H_5$
Carbonyl Compound — Acetal or Ketal

$HC(OC_2H_5)_3 + CH_2(CN)_2 \rightarrow C_2H_5OCH=C(CN)_2 + HCOOC_2H_5$
Malononitrile — Ethoxymethylene Malononitrile

$HC(OC_2H_5)_3 + CH_3CBrHCOOR + H_2 \rightarrow (C_2H_5O)_2CHCH(CH_3)COOR + C_2H_5OH + HBr$
Alpha-Brom-Propionic Ester — Acetal of Formyl-Propionic Ester

$HC(OC_2H_5)_3 + C_6H_5COCH_3 \rightarrow C_6H_5COC_3H_7 + HCOOC_2H_5 + C_2H_5OH$
Acetophenone — Phenyl Propyl Ketone

**TECHNICAL BULLETIN AVAILABLE**

*American-British Chemical Supplies, Inc.*

Selling Agents For

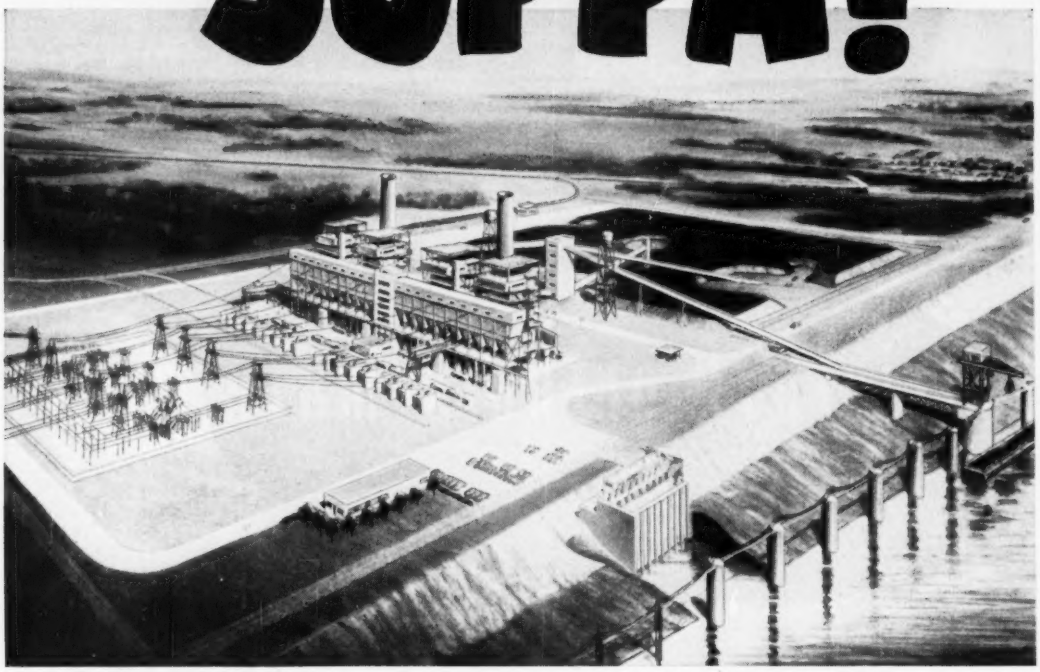
**KAY-FRIES CHEMICALS, INC.**

180 Madison Avenue, New York 16, N. Y. MUrray Hill 6-0661

KAY-FRIES CHEMICALS INC.

Plant—West Haverstraw, N. Y.

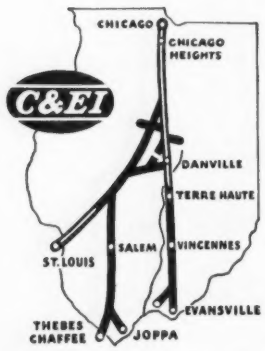
# what's JOPPA?



New electric generating station at Joppa, Illinois.

## It's a fabulous new power center

**——AND MORE. JOPPA HAS:**




*TO THE CHEMICAL INDUSTRY Joppa offers exceptional advantages. For detailed information write our Industrial Department in Chicago.*

. . . plenty of power (1,300,000 k. w.) for new industries
. . . access by river to Gulf Coast sulphur and petroleum
. . . coal available with transportation cost only 85 cents per ton
. . . an inexhaustible industrial water supply
. . . barge facilities now ready for multi million tonnage movement
. . . good central market location—plenty of unemployed labor
. . . very low taxes . . . airport within 20 miles
. . . plant sites available on railroad and river
. . . limestone, fire clay, silica, hardwood all close by
. . . natural gas (main line service)

## . . . served by the C&EI

• fast freight and passenger service

**CHICAGO & EASTERN ILLINOIS RAILROAD**
332 South Michigan Avenue, Chicago 4, Illinois

# BUSINESS & INDUSTRY . . . . .

STRIKEBOUND: Helicopter hops pickets at besieged Lederle plant.

## Labor Fiat

**Labor troubles still filled every nook and cranny of chemical execs' minds this week. To top off the two nation-wide hassles in steel and oil, storm clouds are looming in the chemical industry itself, with at least one major strike in progress. Significantly, two high officials have thrown much of the weight of the Administration behind the steel union.**

Here's the general picture:

**Oil:** With WSB tossing out an 18¢ agreement between the Oil Workers (CIO) and the Farmers Union Central Exchange, and indicating that it would not approve anything above 15¢ except under special conditions, it was only a matter of time until the strike would be completely settled on the 15¢ level.

However, WSB was careful to point out that this 15¢ was not a pattern for industry-wide bargaining, but only the figure which would be sure to get the board's approval. Other figures could be granted, either larger or smaller, but board permission would have to be secured. Industry wasn't gleeful at this "pattern-setting" implication in the WSB ruling, but came around at 15¢.

**Steel:** The union is mad, and has been cheered on by both Vice President Barkley and Labor Secretary Tobin. Speaking at the union's sixth constitutional convention, the two top administrators courted cheers from labor, curses from industry, by such brutal statements as calling industry "un-American" for not gulping down WSB's recommendations, by rooting for a union victory, and by being behind the union, in Tobin's words, "heart and soul." Industry men feel it ill behooves Government leaders to act as cheer-leaders for any union.

With the Administration's action the picture is clear. Come what may, the Administration is standing pat on the position that the WSB package is the last word and that the companies must accept it. The union is poised and waiting for the Supreme Court's decision. If the decision is an okay for Truman, the Government will certainly grant the WSB package. If the decision goes against Truman, the union will strike within the hour. From there on in it is anyone's guess.

**Chemical Trouble:** There was a chemical upset too. At Pearl River 2,400 members of the International Chemical Workers (AFL) walked off the job last week at Lederle Laboratories' plant there. Setting up picket lines immediately after contract negotiations broke down, the workers paralyzed the plant by refusing to allow 2,600 non-union workers through the lines. Another 1,000 construction workers, members of AFL unions, honored the picket lines.

The company has offered a 6¢-an-hour wage hike; WSB has authorized only 4¢, but the union is reportedly demanding 14¢. Fringe benefits, shift differentials are also involved, but the company feels all can be straightened out easily. The rub, according to Lederle, is the same thundercloud hovering over all industry—union shop. Lederle says that's one thing it won't grant. Meanwhile, supervisors are keeping things going inside the plant. The rub: they're in, can't get out, are being fed by helicopter.

**Behind the Dollars:** Money issues, fringe benefits, holidays, and the other traditional friction points of labor-management relations hold the spotlight in all these disputes, but behind the scenes is the real stumbling block to industrial peace—the balance of power between labor and management.

In oil the struggle for money is heavily shadowed by the fear, and threat, of industry-wide bargaining, bitterly opposed by the big oil companies, strongly favored by the big oil unions. Significant in the statement of the Oilworkers' (CIO) Knight that brought the beginning of the end of the strike, was his insistence that he could not declare the strike over; that, he said, could only happen when local unions settled with local management. But the industry is not so sure of these honey-words; fact is that when Knight spoke the strike all but ended.

In steel, and now in the latest chemical strike at Lederle, the old bugaboo union shop is just off-stage keeping remote the hopes for quick settlement. Seen by unions as vital to the union's existence, union shop is anathema to most management men. Both sides understand money, are generally ready to compromise, but the struggle for power keeps our industrial scene in an uneasy ferment.

## Back to Life

**The subject of chemicals in foods, dormant for several months, is back in the news on several counts:**

• The first Delaney Committee report has just been filed. Subject was fertilizers; finding: "no reliable evidence" that chemical fertilizers are hazardous to man or animals; legislative recommendations: nothing needed.

This is far from the last word from Delaney on the overall subject. Still

to come are reports on pesticides, cosmetics, and food additives, and perhaps one on water fluoridation.

• After 11 years of consideration, FSA signed its almost-final bread standards. The agency approved use of mono- and di-glycerides, but not polyoxyethylene monostearate, as ingredients in five standard types of bread. They still can be used in other kinds. Reason for glyceride allowance: historical use basis in improving action of shortening. Use of any compound specifically as a softener would "deceive the public."

• Isaac Fogg, president of Atlas Powder, major polyoxyethylene producer, was in Washington just before the report came out. Snapped he: ". . . highly discriminatory and illegal . . . unfair administrative rulings that in effect favor our competitors . . ."

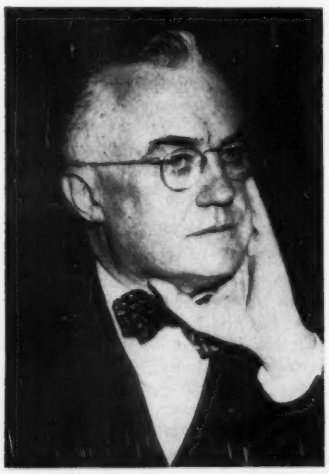
Atlas is definitely considering taking the Government to court.

The absence of recommendations from the Delaney committee on fertilizers was expected.

The overall credibility of committee conclusions, most feel, has been enhanced by a favorable report on this relatively unimportant subject. If the report on pesticides is also mild, criticism on additives will get added emphasis.

The growing conviction that this will be the case has sparked a number of as yet unofficial conversations on future policy between food and chemical manufacturers.

The problem now is to find some positive action which can be taken by both industries to overcome an all-too-prevalent feeling that food manufacturers are being led about on a chemical leash.



FSA's EWING: After 11 years . . .

SOLVAY'S CHADWICK AND ZIMMER: Key to a city as well as an industry?

# Selling Solvay in Syracuse

**The formal dedication this month of Allied Chemical & Dye Corp.'s Solvay Process Division's new multi-million dollar soda ash plant at Syracuse, N.Y. marked a significant stage in two of the company's building programs: postwar expansion of its plant and equipment; creation of good community relations.**

Solvay's expansion is no news to the chemical industry, which expects big things of the company, especially in alkalis. Still the list of new construction at Syracuse since 1945 is impressive: plants for calcium chloride, dense ash, Snowflake (sodium sesquicarbonate); the new soda ash plant (world's largest); and a caustic-chlorine plant, site for which is now being prepared.

The company's contribution to the economic life of the country through the new facilities is important. But to many in Syracuse, the fact that Solvay "let down its barriers" by hanging out the "welcome" sign on May 11, inviting residents of Syracuse to visit the recently completed unit, was more important.

There was a general feeling in the community that for the first time in many years bickering between Solvay and its neighbors was over. For that healthy civic sentiment, Solvay president A. B. Chadwick and director of public relations H. Edward Rowlands could look back on two years of hard work toward that end.

**Long-Time Problem:** Facing Rowlands was a hostile attitude growing out of a problem most industries have to solve—contend with waste disposal. Citizen's resentment over the effects of the plant on the city's Lake Onondaga went back fifty years.

In 1901, the company obtained from the state a tract of land, partially under water along the foot of the lake, on conditions it would fill it in within five years, build substantial structures there. When the time was up, the state, badgered by complaints of area residents, wanted to ban continued use of the lake for dumping. An agreement was worked out: Solvay erected dykes around the lake shore, but breaks occurring from time to time caused flareups of civic anger.

When the dykes broke in 1943 and flooded adjoining state fairgrounds, a new community campaign against dumping was born. But the war -- and Solvay's immense contribution to its winning—dissipated much heat.

Came the end of the war and Solvay's need for rebuilding some units, building new ones. Before the company could go ahead with plans, the disposal problem had to be licked to its and Syracuse's satisfaction.

**Tell the Story:** Solvay saw the chance to get a city-owned airport near its soda ash facilities for waste bed purposes, but a ruckus broke out in the Town of Camillus where the

beds were to be located. Public rezoning hearings were bitter, but in time Solvay sweetened them with an agreement to accept a fat $675,000 tax assessment on the land. The company also offered to work with landscape experts, make the beds attractive. Eventually permission for the disposal area was granted.

In solving the basic company-community problem affecting the expansion, Solvay employed newspaper ads explaining what its problems were.

While in this case one specific objective was accomplished by the appeal to the public, the now two year-old program is a continuous one aimed at keeping the community informed of what Solvay does, what it means to Syracuse, what it needs Syracuse to do for it. Among the approaches Rowlands has used.

- Newspaper ads, with photos of Solvay employees identified by name, to show where industrial products go, how they are made, the amount of money the company spends in the area, etc.
- Cooperation with public information services. When an accident occurs, instead of making no statement and allowing wild rumors to grow, the company gives a straight and complete report. It also reports safety records, expansions, etc.
- More personal activity in community chest campaigns, etc.
- Meetings with civic leaders to get acquainted, discuss problems.

**New Era:** At the dedication, Chadwick handed R. G. Zimmer, plant manager, a glass key symbolic of one of the major ash-consuming industries. Syracusans appreciate the key as a symbol of the new "open door" policy, may yet grant Solvay a key to their city.

# Too Much is TOO MUCH

**The U.S. pesticide industry is yelping in pain this week and generally mixing up its metaphors. According to industry spokesmen, American internationalists and foreign diplomats are committing the double sin of biting the hand that has fed them and at the same time kicking a man that's down.** Source of all this anguish is the decision by the United Nations and others to build four DDT plants abroad, one each in Ceylon, Pakistan, Egypt, and India. It is to be a "joint-venture" between the World Health Organization and UN's International Children's Emergency Fund, working together—largely with U.S.-donated funds—and the governments of the individual countries slated to get the plants.

**Double Jeopardy:** With considerable justice the American DDT industry can claim that it has been crossed. It is suffering today under the strain of a tremendous surplus capacity, built up to a great extent by the lure of the international demand fostered by such organizations as WHO; and now that the plants are built, the same diplomatic groups are pulling the rug out by taking the markets away, using taxpayers' money to do it.

Industry men admit that the plants in question are not big enough to break them. Total planned capacity for the four units is only 6 million pounds (technical DDT basis) and this is a small drop compared to the American over-capacity figures. The latter amounts to a 160 million pound potential capacity hanging over a "normal" domestic market of 60 to 65 million pounds.

**Trend Starter:** But what makes the U.S. producers especially worried is that the four little plants may start a trend. Next step would be import barriers to protect the local DDT industries in the four countries. That would put American insecticides at a serious disadvantage in the coming struggle with European DDT for the remaining world markets. Unfortunately, the areas that need it worst are short on dollars.

State Department and United Nations spokesmen have conflicting reasons for their decision. On one side they claim that the projects were decided upon when DDT was scarce in world markets and that therefore they should be built to protect these countries in case of another period of shortage.

In contrast to this statement is the opinion that the output of DDT from these plants will all go to "new" health uses, concentrating on the care of children exposed to malaria-bearing mosquitos, and that therefore the normal imports for agricultural uses should not be affected.

**Counterattack:** The National Agricultural Chemical Association is fighting back hard, valiantly trying to convince the world organizations that their decision ought to be reviewed. NACA's Lea Hitchner is basing his arguments on economic grounds. He feels that the organizations may actually be doing the four countries a disservice by promoting industries which could not stand on their own feet under today's conditions of international DDT supply and demand.

He is especially disturbed by the fact that government money is to be used. In fact, his association would withdraw its protests if local free enterprisers decided to do the financing. (This is a safe position since he is convinced that no profit-minded individuals would build new capacity in the face of today's overproduction.)

But international bureaucracy is hard to thwart. As one U.S. official close to the situation put it last week: "Despite the talks going on between DDT producers and the United Nations, the plants will go up."

## Current List of DPA-Certified Chemical Facilities

| Company, Location | Product | Amount Certified | % Certified |
|---|---|---|---|
| American Aniline & Extract, Philadelphia, Pa. | Acrylic nylon size | $ 84,262 | 50 |
| Hercules Powder, Hattiesburg, Miss. | Camphene | 527,000 | 45 |
| Hercules Powder, Henderson, Nev. | Toxaphene | 1,967,894 | 45 |
| Detrex Corp., Wyandotte, Trenton, Mich. | Alkali cleaners | 664,590 | 45 |
| Sterling Drug, Cincinnati, O. | Anti-malarial drugs | 47,464 | 60 |
| Michigan Chemical, Manistee, Mich. | Liquid bromine | 361,058 | 65 |
| Minnesota Mining & Mfg., Chicago, Ill. | Industrial tape | 9,030,000 | 65 |
| Industrial Tape, New Brunswick, N.J. | Industrial tape | 1,301,010 | 65 |
| American Zinc Co. of Illinois, Dumas, Tex. | Sulfuric acid | 4,372,000 | 70 |
| Southern Cement, Roberta, Ala. | Calcined lime | 541,631 | 45 |
| Grand Canyon Lime & Cement, Nelson, Ariz. | Quicklime | 264,536<br>178,718 | 40<br>50 |
| Drummond Dolomite, Drummond Island, Mich. | Dolomite | 190,000 | 25 |
| Valley Dolomite, St. Francois County, Mo. | Refractory dolomite | 413,836 | 25 |
| National Cylinder Gas, Sterling, Ill. | Oxygen | 173,114 | 55 |
| Stuart Oxygen, San Francisco, Cal. | Hydrogen | 22,000 | 60 |

## COMPANIES . . .

**Attapulgus Clay:** Further diversification of company's interests seems a good bet, now that Standard Oil (N.J.) has sold its half interest to Wall Street investment houses F. Eberstadt and Lazard Freres.

This could mean expansion and diversification in petroleum catalysts and refining clays produced by Filtrol

Corp. (owned 50-50 with Filtrol Co. of California), in activated bauxites produced by Porocel Co. (again half-owned; partner here is American Cyanamid) or in its own Fullers earth production.

• Other half interest in Attapulgus is held by Atlantic Refining. Says this company: "Investment in Attapulgus has been and continues to be quite satisfactory."

•

**Olin Industries**, which began producing cellophane at Pisgah Forest, N.C., last year, has bought a 665 acre tract on the Wabash River in Indiana, near Covington, Ind., and Danville, Ill., and has tentatively decided to build a second cellophane plant there. Plans aren't concrete yet, and the site could easily be used instead for expansion of other activities.

•

**Reichhold Chemicals** will receive $5 million from sale of 3½-4½% first mortgage bonds to banks and insurance companies in Detroit, Boston, Springfield, Mass., and Philadelphia. Funds are to be used in paying certain current obligations and to provide working capital and expansion funds, especially for southern operations at Charlotte, N.C. and Tuscaloosa, Ala.

•

**Nickoles L. Dodge**, for 15 years technical service and sales representative of Glyco Products, has begun construction of a service and development laboratory in Santa Rosa, Cal.

•

**Hercules Powder's** new petrochemical plant, to produce phenol, para-cresol, acetone and cymene alcohols (*CW, Aug. 25, '51*), will be built on a 275 acre tract near Gibbstown, N.J. The plant will be located near Socony-Vacuum Oil and immediately adjacent to Du Pont's Repauno facilities.

## EXPANSION . . .

**Hydrochloric Acid/Magnesium Oxide:** International Minerals and Chemical Corp.'s potash division will construct a $2.5 million plant at Carlsbad, N. M., to produce hydrochloric and magnesium oxide from byproducts of potassium sulfate processing.

•

**Ammonia:** Hooker Electrochemical's $2 million anhydrous ammonia plant at Tacoma, Wash., has begun production. Entire production has been contracted for, and the company is already considering further expansion.

• Allied Chemical and Dye will build an ammonia/urea plant at La Platte (near Omaha), Nebraska. Estimated cost will be $25 million, with construction slated to get under way this summer, and completion, within 18 months to 2 years. Natural gas will be used as hydrogen source.

•

**Rock Phosphate:** While Florida already produces more than 8 million tons of phosphate a year, Amco Exploration (American Metal Co., Ltd., subsidiary) believes it can tap a new source. It has asked Duval County (Jacksonville) for permission to drill along the outside edge of county rights of way.

•

**Bodied Oils:** Archer-Daniels-Midland is at work on a refinery and bodying plant at Los Angeles to manufacture bodied oils and, chemically modified oils.

• It has also just begun construction of a solvent extraction plant at its present Buffalo, N.Y., operations site.

•

**Polyvinyls:** Dow Chemical, long a major factor in vinyl chloride-vinylidine chloride copolymers (saran), expects to have facilities at Midland, Mich., in operation early this summer for polymerization of polyvinyl chloride. It will produce PVC in an unformulated resin form.

•

**Oxygen:** Industrial Air Products (Portland, Ore.) will establish an oxygen manufacturing plant at Panama City, Fla.

•

**Hydrochloric:** Stauffer Chemical is scheduled to begin construction this month on a hydrochloric acid plant at Louisville, Ky., and will supply Du Pont's nearby Neoprene plant. Carbon tetrachloride is also to be marketed by Stauffer.

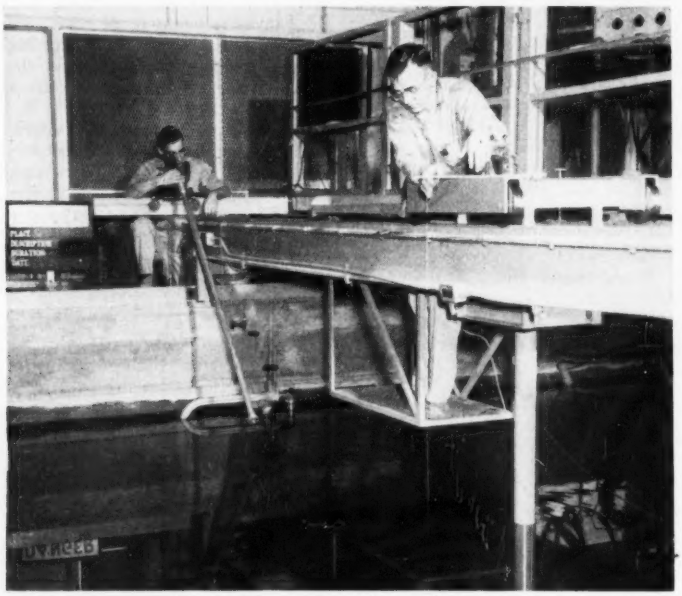
•

**Alloy Metals:** Fansteel Metallurgical (Chicago) will double potassium tantalum fluoride and columbium oxide production. Use: in making columbium and tantalum alloy materials.

•

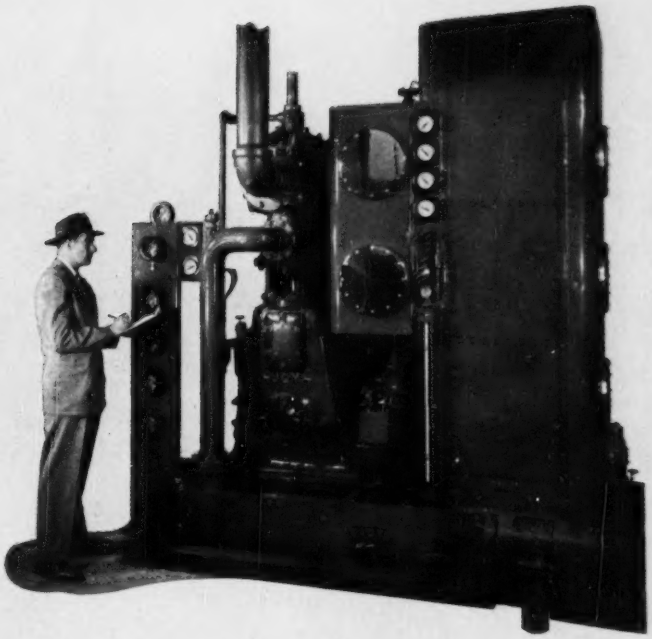
**More Ammonia:** Ground was broken last week for Shell Oil Co.'s proposed multi-million dollar ammonia production plant at Ventura, Calif. In answer to the growing demands for ammonia fertilizer, the new plant will produce 150 tons of anhydrous ammonia a day (*CW, Dec. 29, 1951*).

The plant's 29-acre site is laid out to allow for further expansion with a minimum interruption of ammonia production.



## Inexpensive Atom Busting

**A RELATIVELY CHEAP, low power nuclear reactor, submerged in a "swimming pool" water shield, is now in operation at Oak Ridge. The entire facility was constructed for slightly more than $200,000 exclusive of uranium fuel. Actually the reactor core itself cost only $58,400, the rest going for the building and other equipment. With a continuous, full-load power rating of 10 kw, maximum neutron density of about 100 billion thermal neutrons per square centimeter, and the low cost, the reactor might be suitable for schools and other research and training institutions.**



# NOW!

## JOY unlocks the door to CHEAP OXYGEN

A world's *first*—the Joy high-purity Oxygen Generator is based on entirely new principles, with exclusive advantages. It's compact, inherently safe and completely automatic—as easy to run as an air compressor. Uses no corrosive chemicals, operates at low pressure.

You don't buy compressed air in bottles; you buy your own air compressor. On the same reasoning, *buy a Joy Oxygen Generator;* make your own high-purity oxygen at a cost so low you never thought it possible. ● Different sizes for different users . . . tell us *your* requirements. *Joy Manufacturing Company, Oliver Bldg., Pittsburgh 22, Pa.*

**JOY**

**SPECIALISTS IN THE COMPRESSION AND MOVEMENT OF AIR AND GASES SINCE 1885**

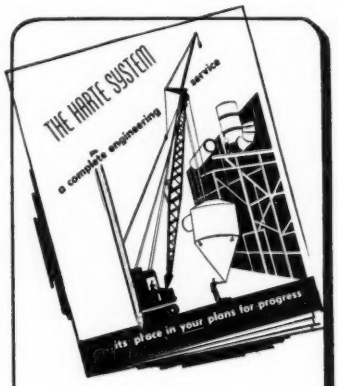
# WHATEVER

# Your Engineering Needs

Are you looking for engineers to handle your expansion, relocation, diversification plans? Then consider the Harte System—a system designed as a solution to the problem that an ever increasing rate of expansion coupled with a shortage of highly trained men is placing upon every industrial organization. Harte engineering can absorb that extra load now being placed on your engineering department.

The Harte System of *complete* engineering gives you an experienced, balanced staff of engineering specialists geared to an up-to-date pace . . . capable of handling all phases of a project with speed and efficiency . . . capable of carrying your project from planning to profit, *anywhere and now.*

Whatever your engineering requirements, the Harte System can be applied.




***Write today for your copy of our new booklet, "The Harte System . . . and its place in your plans for progress."***

**John J. Harte Co.**

ENGINEERS

CONSTRUCTION MANAGERS

284 Techwood Drive, N. W., ATLANTA • NEW YORK • HOUSTON • MEXICO, D. F.

# Tariff Simplification—Again

Senate Finance Committee has heard chemical industry arguments on new tariff bill.

Senators probably will vote to keep U.S. sales prices as a basis for assessing coal tar chemical duties.

**The chemical industry** has just about won another round in its fight to keep present tariff walls.

The round, in many ways, is a repeat performance of last fall's tussle over the tariff simplification law. Then, industry representatives convinced House committee members that a clause in the administration-sponsored measure would have been detrimental to American chemical companies (*CW, Aug. 18, 25, '51*).

This time the argument is the same; where it was presented was different.

Chemical spokesmen have been testifying this month before the Senate finance committee, attempting to persuade the senators not to remove the chemical exemption. Indications now are that the Senate will heed industry's plea.

The administration is still claiming that the practice of taxing foreign chemicals on the basis of U. S. price results in a disguised tariff of 200-300%, *ad valorem* basis. Coal tar dyes and intermediates are two of a small list of commodities on which U. S. selling price determines the duty.

The tariff simplification measure—as the Senate has been considering it—would set foreign value as basis for all tariffs. This would shave the duty on chemicals to between 25 and 40%, *ad valorem*.

**Administration View:** As seen by government experts, an exemption for chemical makers is not needed. They point out that the industry is probably one of the most efficient, and would be able to compete successfully against foreign producers in most lines. They also argue that if the chemical industry wants to maintain its high postwar level of exports, it will, in turn, have to accept some home competition from imports.

"And besides," ask those with this opinion, "why must any industry have special concessions?"

**In Rebuttal:** Chemical spokesmen reply that of all the groups asking special privileges, coal tar chemical producers are most basic to the American economy in either peace or war. Certainly, they admit, they are efficient, but this hardly makes up for disparity between wages paid here and abroad.

So far, Congress has sided with the industry.

The proposed legislation before Congress, while important, is only one facet of the overall tariff picture. As important as passage, defeat or veto of legislation is the thinking within the executive agencies charged with its administration.

Currently, the U. S. Tariff Commission has before it 16 applications for tariff increases. There were only two last fall. Commodities covered run the gamut from motorcycles, watches and chalk to garlic and pregnant mares' urine. Proponents and opponents of higher duties on these are getting a chance to argue before the Commission. If higher duties are recommended by the Commission, they would need presidential approval. If the President vetoes them, he would have to explain such a move in writing.

Best indication of the way the Tariff Commission trade winds will be blowing will be a decision, due in June, on motorcycle duties. Importers, unlike those of many other of the products, have fought a tariff increase hard and well.

There is every chance that the decision on chemical tariffs will be based on thinking similar to that governing in this case.

**Simplification Stress:** Despite the detriment (from the chemical manufacturers' view) of any simplifying of valuation, there is little argument that the overall philosophy is good. The bill would, for example, change one of the shortcomings of present laws—the inconsistency of duties assessed in different ports. The lists of dutiable items haven't been revised since 1930, leaving rates to be charged on, for example, plastics pretty much up to individual port examiners' discretion.

The actual fate of the bill is still in doubt. Congress could easily overlook the measure in the rush to adjourn.

Congress, however, is aware of the growing business clamor for protection. Administrators of U. S. trade and foreign air programs, too, are aware of the trend. Say they: If the trend continues, protectionism can be bucked only by the emergence of a fighting lobby of the big export industries.


Investigate
KENNEDY POLYETHELENE
DRUM-CARTON LINERS

FOR FULL PROTECTION
OF PRODUCTS IN
TRANSIT or STORAGE

Practically any acid, alkaline or base chemical product that's packed in steel drums or fibre containers can now be shipped more safely and at lower costs with *Kennedy* polyethelene liners. Made of only the finest virgin material, these moisture-proof, chemically inert liners eliminate spoilage losses, protect the products, keep out contamination, *assure complete product recovery* at destination. Kennedy also makes case, drum and barrel liners of creped paper for dry or semi-solid chemicals. Both types are fabricated to specified dimensions for your particular requirements. Write, 'phone or wire for free samples. No obligation.

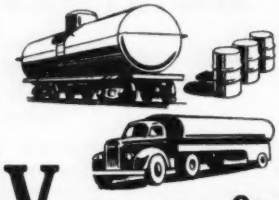
DIMENSIONAL PACKAGING

kennedy
CAR LINER AND BAG CO.
SHELBYVILLE, INDIANA
NEW YORK PHILADELPHIA BUFFALO CLEVELAND
DETROIT CHICAGO LOS ANGELES
SAN FRANCISCO PORTLAND SEATTLE

Nitrates

Potassium
Sodium
Barium

DAVIES NITRATE CO. INC.
118 LIBERTY STREET
NEW YORK 6, N. Y.



VEGETABLE OILS

IN TANK CARS - DRUMS
TANK WAGONS

- CASTOR OIL
- RICE BRAN OIL
- RAPESEED OIL
- MUSTARD SEED OIL

George Degen & Co.
INC.
111 Broadway, N. Y. 6, N.Y.

CARTOONIST HOOD: Stings some, lauds others, makes all safety-conscious.

# Carelessness in Caricature

**At Sherwin-Williams Co.'s** Chicago plant the winning departments in the plant safety contest recently marked their second straight year without a lost-time accident, and a lot of the credit has to go to part-time cartoonist Pete Hood of SW's Engineering & Construction Dept.

In winning the fourth first place in SW's inter-department safety contest, the workers carried home prize sets of six 14 oz. glasses, added another bar to the departments' wall plaque awards. Characteristic of SW's intense and all-pervasive safety program, the prize glasses themselves serve as safety messages by having the words "Award for Accident Prevention Contest" printed on them as a constant reminder.

**Smiling Safety:** The plant's safety department gives the cartoon approach a lot of weight in making this record. Every month workers at the plant find a two-page cartoon spread called "Safety Topics" in the local house magazine *Palette & Brush*. This is the work of engineer-cartoonist Hood, and, judging from experience, readership is very high for these pages.

Typical of Hood's humorous, but bitingly realistic, approach to safety, is a recent series consisting of a cogent parody on the old rime, "Ten Little Indians." Coupled with drawings, funny in an ironic way, are such straight-to-the-point doggerel verses as "Nine little workmen, hoisting up a weight, One stood beneath the load, Now they are eight."

Experience of safety department men has shown that workers tend to identify their fellows, and sometimes even themselves, in Hood's drawings. The identification, however, is not by resemblance of picture, but by resemblance of action, and in this way workers see themselves, and their unsafe practices, much more clearly.

**Rivalry Works:** Since the Chicago plant started the contests in 1950, two have been held each year. Rivalry is intense, each department trying to equal or better its own previous record rather than reach any set standard. In this way departments with unavoidable hazards are under no disadvantage compared with inherently safer departments. The system also results in many 1st place ties—which is okay with SW since it spreads the morale boost.

Originally the prizes were not of the "take-home" variety, but the safety department discovered that such "take-home" prizes tended to stir up safety consciousness at home, and has been quick to take advantage of this fact. In the wife and family the safety department has powerful allies, and it wants to keep them.

The cartoon work is caculated to foster the rivalry between departments. By stinging some, and lauding others, but most particularly by exposing errors in such a way the department can't help recognizing itself, Hood builds a strong drive to keep the department safe. So far it has worked very well.

# THREE National Aniline
# "CONTROLLED VOLATILITY" ANTIOXIDANTS

## OF PARTICULAR INTEREST TO THOSE WHO WORK WITH SURFACE COATINGS

**NATIONAL ANTIOXIDANT A**

Most powerful and volatile of the three. Most useful in printing inks, quick drying enamels, linoleum finishes and the like.

**NATIONAL ANTIOXIDANT B**

Medium Volatility. Leaves a minimum of odor in the concentrate. Used in linoleum, varnishes, etc.

**NATIONAL CHEMICAL ASA**

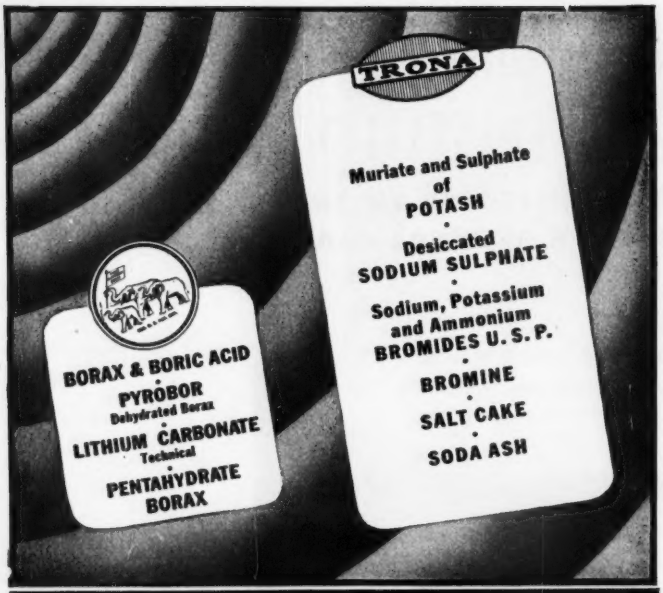
Least volatile of the three. Widely used to prevent skinning on paints and enamels.

These versatile chemicals retard oxidation at a pre-determined rate of volatility. Their use introduces no unusual complications in existing surface-coating formulations.

We will welcome the opportunity to work with you on applications of National Antioxidants in paints, varnishes, lacquers, printing inks, linoleum and other surface-coating materials. Samples and technical data are available. The more specifically you define your need, the more promptly and practically we can help you.

**NATIONAL ANILINE DIVISION**
ALLIED CHEMICAL & DYE CORPORATION
40 RECTOR STREET, NEW YORK 6, N. Y.

Boston Providence Philadelphia Chicago San Francisco
Portland, Ore. Greensboro Charlotte Richmond Atlanta
Columbus, Ga. New Orleans Chattanooga Toronto




AMERICAN POTASH & CHEMICAL CORPORATION

122 EAST 42nd STREET • • • NEW YORK 17, N. Y.

38 SO. DEARBORN STREET CHICAGO 3, ILLINOIS

214 WALTON BUILDING ATLANTA 3, GEORGIA

3030 WEST SIXTH STREET LOS ANGELES 54, CALIF.

*FOR HIGH-QUALITY*

**Ammonium Thiocyanate**

*YOU CAN COUNT ON KOPPERS!*

● Koppers offers ammonium thiocyanate that is low in insolubles . . . that is dry when shipped and dry when received by you.

Koppers Ammonium Thiocyanate stays dry because it's shipped in kegs or barrels that are lined with tough polyethylene plastic, the liner that prevents water absorption.

Send us your order or write for further information.

**FOR USE IN . . .**

- Formulating adhesives and animal glues
- Hastening the curing time of synthetic resins
- Pickling of iron and steel
- Electroplating processes
- Improving affinity of dyestuffs
- Protecting dyestuffs from action of copper equipment

KOPPERS Coal Chemicals

KOPPERS COMPANY, INC.

Tar Products Division

Pittsburgh 19, Pa.

## FOREIGN . . . . .

**Plastics:** The first American-built plastics plant has gone into operation at Kambara, near Tokyo, will up production of vinyl plastic in Japan about 50%. Owned and operated by the Japanese Geon Co., Ltd., the plant is receiving technical assistance from B. F. Goodrich Chemical Co., one of its principal stockholders. The plant, with a current production schedule of 6 million pounds per year, can double its capacity if and when the need for vinyl plastic rises.

•

**ACTH:** With 8 million whale hypophyses acquired from Norwegian Antarctic whaling expeditions, plus additional supplies from British expeditions, the Oslo firm of Nyegaard & Co. now has enough raw material to make a year's production of ACTH possible.

•

**Tripolyphosphate:** The first tripolyphosphate plant in Belgium, erected by Union Chimique, Belge, near its works at Zandvoorde, went into operation this spring.

•

**Petroleum Catalysts:** A new catalyst plant at Warrington, England is now hitting full scale production in its output of petroleum cracking catalysts. The plant was constructed by Joseph Crosfield & Sons, Ltd., an affiliate of Lever Bros. & Unilever Ltd., and is under the technical direction of the Davison Chemical Corp. of Baltimore. British interests have invested about one million pounds sterling in the operation.

The plant's output is expected to reach more than 10,000 short tons of catalyst a year—enough to process 90 million barrels of petroleum. Davison processes are employed in producing the microspheroidal type of synthetic fluid silica-alumina catalysts.

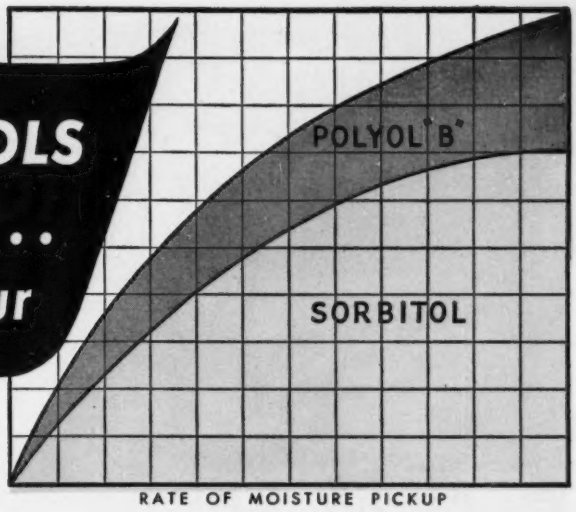
Davison has already contracted with five big oil companies to furnish them the catalysts required for their refinery operations. This project will enable the United Kingdom to save several millions of dollars annually in dollar exchange.

•

**Uranium:** Kennecott Copper Co. has focused on Rum Jungle, Northern Territory, Australia, as the site for a proposed new plant for treating uranium and copper ore. Rum Jungle, one of the largest uranium fields in the world, has already been inspected by an Atomic Energy Commission team.

Presumably, the Australian Government Commonwealth Bureau of Mineral Resources will have the uranium ore given preliminary treatment at Rum Jungle in order to reduce transportation costs; the plant would sepa-

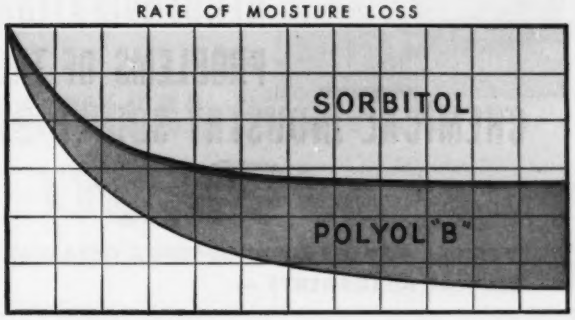
# BUY POLYOLS ON FACTS... Compare all four




FACT No. 1

## *Sorbitol for Narrow Humectant Range*

Atlas sorbitol picks up less moisture and loses less moisture—at a slower rate—than other commercial polyols. Your products will retain their saleability better under all humidity ranges when they are conditioned with sorbitol.




FACT No. 2

## *Sorbitol for Economy*

On price stability alone, sorbitol rates as the "best buy" in polyols. Its price trend through the years has been steadily downward. Still another price reduction recently has been made. Ask about it.

FACT No. 3

## *Sorbitol for Availability*

Sorbitol is derived from sugar which is available in almost unlimited quantities. You don't need to worry about shortages of sorbitol or its derivatives.

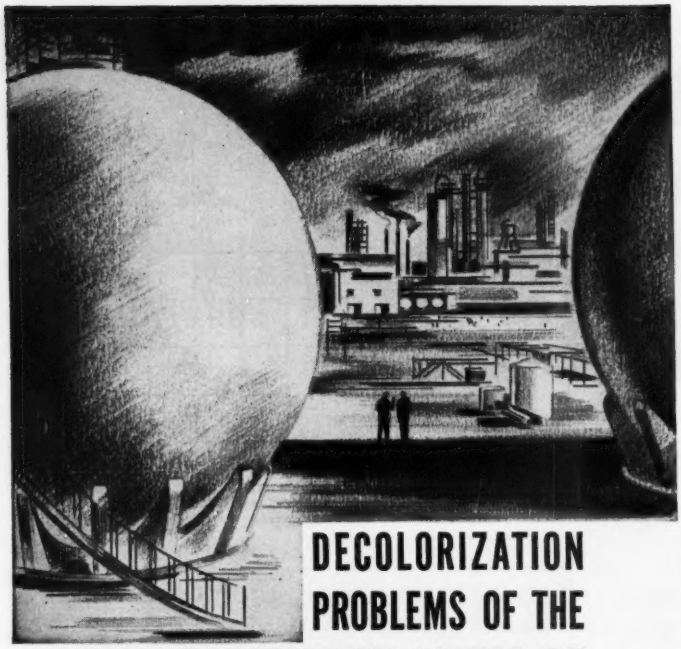
Write today for the valuable 22-page Atlas sorbitol book containing charts, usage tables, and other helpful data. Personal technical assistance is available at your request.

*Industrial Chemicals Department*

**ATLAS POWDER COMPANY**

WILMINGTON 99, DELAWARE • OFFICES IN PRINCIPAL CITIES

ATLAS POWDER COMPANY, CANADA, LTD., BRANTFORD, CANADA



DECOLORIZATION PROBLEMS OF THE CHEMICAL INDUSTRY SOLVED BY

Filtrol

**TYPICAL RANGES OF PROPERTIES OBTAINABLE IN FILTROL ADSORBENTS—**

| PROPERTY | RANGE |
|---|---|
| Bulk Density | 25 lbs. cu. ft. to 80 lbs. cu. ft. |
| Pellet Size | 1/16" dia. to 1" dia. |
| Granule Size | 4 mesh to 60 mesh |
| Powder Size | 10% 0-20 to 50% 0-20 microns dia. |
| Surface Area | 50 to 500 sq. meters per gram. |
| pH (Slurry) | from 2 to 7. |
| Cation exchange capacity | from 10 to 300 milli-equiv. /100 gm |
| Water Adsorption | from very low to 40% @ 100 RH. |
| Impregnation with Promoters | per specification. |

| REASONS FOR USING FILTROL | |
|---|---|
| CLARIFICATION | CONDENSATION |
| POLYMERIZATION | ION-EXCHANGE |
| CATALYSIS | ISOMERIZATION |
| ADSORPTION | PURIFICATION |
| CHROMATOGRAPHY | DRYING |
| DECOLORIZATION | ALKYLATION |
| ESTERIFICATION | DEHYDRATION |
| OXIDATION | HYDROGENATION |

Our large and newly expanded research facilities are at your disposal.
Inquiries on any processing problems are invited.

Filtrol® CORPORATION

WORLD'S LARGEST PRODUCER OF CATALYSTS, ADSORBENTS, AND DESICCANTS

DO YOU HAVE THIS BOOKLET? IF NOT, WRITE TODAY.

FILTROL CORPORATION, CHEMICAL DIVISION
GENERAL OFFICES: 727 West 7th St., Los Angeles 17, California

Gentlemen: Please send us your new booklet, Chemical Applications of Filtrol Products.

Name:_____

Firm Name:_____

Address:_____

City:_____ Zone____, State_____

®T. M. REG. U. S. PAT. OFF.


rate the uranium ore by flotation before treating the copper.

•

**Coal:** With a view to building a new synthetic oil plant (Fischer-Tropsch), in the Belgian Congo, the industrial group, Syndicat des Charbons de la Lukuga, is busy conducting the first gasification tests with coal mined from the Lukuga Basin. The tests will determine whether the coal is suitable for producing synthetic gas and will also indicate the most appropriate gasification process.

•

**Ammonia Sulfate:** Australia's current drive for increased primary production is spurring ahead plans for an $18 million ammonia sulfate works, to be built at Mt. Morgan, Queensland, Australia. Experts engaged by the Queensland Government report this outlay would mean an estimated output of 100,000 tons annually. With the necessary capital to be supplied by outside sources, Mt. Morgan Mines, Ltd. has agreed to take over operation and technical direction of the plant.

## KEY CHANGES . .

**Paul D. Merica:** To president, The International Nickel Co. of Canada, Ltd.

**R. Leslie Beattie:** To director, The International Nickel Co. Inc.

**H. R. Macmillan:** To director, Dominion Tar & Chemical Co. Ltd.

**S. H. Williams:** To vice president and general sales manager, General Dyestuff Corp.

**George O. Linberg:** To vice president and New England sales manager, Synthron, Inc.

**John C. Bugher:** To director, div. of biology and medicine, U.S. Atomic Energy Commission.

**W. Nelson Stoops:** To assistant director of research in physical chemistry, research center, Carbide & Carbon Chemicals Co.

**Whitney Weinrich:** To manager, process engineering section, Catalytic Construction Co.

**Edwin M. Ott:** To manager, investment analysis div., Pennsylvania Salt Mfg. Co.

**I. Silverman:** To factory manager, L. Sonneborn Sons, Inc.

**Walter A. Howell:** To superintendent, planning and distribution div., Parke, Davis & Co.

**E. H. Bohle:** To assistant manager, sales dept., Jefferson Chemical Co.

# THE BEST PARTNER

## A CHEMICAL SHIPPER EVER HAD!

Your North American tank car works day in and day out, year after year, never stopping but to load and unload your products and for maintenance. Here's truly a business partner worth many times its keep . . . the strongest member of any chemical shipper's team. And today, with a critical shortage of specialized tank cars, your North American partner is working harder than ever . . . keeping on the go every possible minute to meet the tremendous demands of the growing chemical industry. Remember—on the rails and in its offices, North American is your partner for fast, economical transportation and helpful, experienced shipping advice.

*For Special Products Requiring Special Care*

**NORTH AMERICAN CAR CORPORATION**

**NORTH WESTERN REFRIGERATOR LINE COMPANY**

A NATIONWIDE ORGANIZATION WITH BRANCH OFFICES IN IMPORTANT MARKET CENTERS

231 South LaSalle Street, Chicago 4, Illinois

RIO GRANDE NATIONAL BLDG., DALLAS, TEXAS — SHELL BUILDING, ST. LOUIS 3, MO.

341 KENNEDY BUILDING, TULSA, OKLA. — 681 MARKET STREET, SAN FRANCISCO 5, CALIF. — 60 EAST 42ND STREET, NEW YORK 17, N. Y.

91 SOUTH MAIN STREET, FOND DU LAC, WIS. — 739 PILLSBURY AVENUE, ST. PAUL 4, MINN.

*facts* you may want to know about—

# Magnesium Trisilicate

Foremost American Producer

Mallinckrodt, one of the first American producers of pharmaceutical grades of magnesium trisilicate, began manufacturing this valuable antacid in 1937 and is today among the foremost domestic producers.

Dependably Uniform

Of special value to pharmaceutical manufacturers is the high degree of lot-to-lot uniformity of Mallinckrodt magnesium trisilicate, not only in chemical composition but also in moisture content, particle size distribution, and bulk. Mallinckrodt magnesium trisilicate fully meets U.S.P. requirements.

Forms Available

To fit both tableting and suspension needs Mallinckrodt magnesium trisilicate is supplied in the following forms:

Magnesium Trisilicate U.S.P. Powder
Magnesium Trisilicate U.S.P. Bulky
Magnesium Trisilicate U.S.P. Super Bulky

Important Properties

*Important Properties—Typical Values*

| | Powder | Bulky | Super Bulky |
|---|---|---|---|
| Bulk—Approx. ft. oz./lb. | 45 | 75 | 130 |
| Approx. Particle Size Distribution* | | | |
| less than 5 microns | 15% | 50% | 65% |
| 5-10 microns | 10% | 30% | 15% |
| 10-20 microns | 35% | 10% | 15% |
| 20-40 microns | 40% | 10% | 5% |
| *Determined by sedimentation methods. | | | |
| Adsorptive power—mg. methylene blue/gram | not less than 100 | not less than 200 | about 150 |
| Acid consuming capacity—cc. N/10 HCl/gram | 140-160 | 140-160 | 140-160 |

Companion Products

For alkaline mixtures containing magnesium trisilicate, Mallinckrodt also supplies top-quality companion products such as Magnesium Carbonate U.S.P., Calcium Carbonate U.S.P. and Bismuth Subcarbonate U.S.P.

Samples and prices will be supplied on request. For technical information write for Magnesium Trisilicate Data Unit X-212.


MALLINCKRODT CHEMICAL WORKS

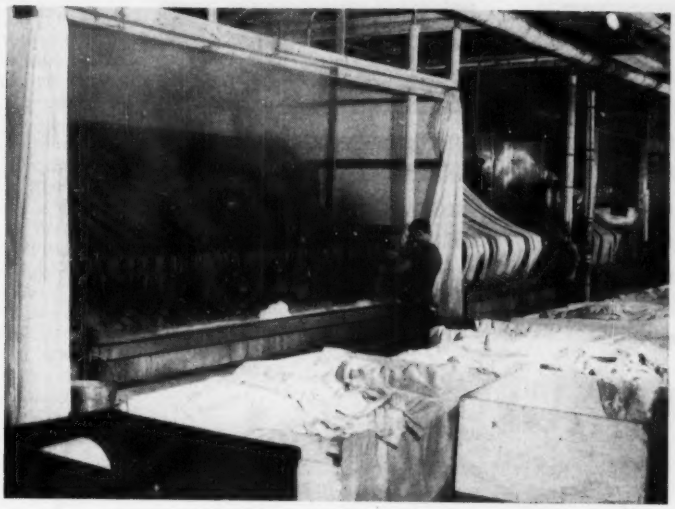
Mallinckrodt St., St. Louis 7, Mo. • 72 Gold St., New York 8, N. Y.

Chicago • Cincinnati • Cleveland • Los Angeles • Montreal • Philadelphia • San Francisco


ORGANIC INTERMEDIATES • INORGANIC CHEMICALS • CHEMICALS FOR ELECTRONIC USES • METALLIC SOAPS • ANALYTICAL REAGENTS • PHOTOGRAPHIC CHEMICALS •

Mallinckrodt®

MANUFACTURERS OF FINE CHEMICALS FOR INDUSTRY • SINCE 1867 •



DYEING NYLON: New problems with new synthetics.

# High Hurdle For Synthetics

An intensive push for large-scale dyeing methods highlights the current phase of synthetic fiber development.

New processes and innovations in conventional practice have given good results in batch-dyeing. But continuous processing methods, especially for the acrylics, have not fared so well.

Here's the broad picture as it appears today:

**Smack in the path** of the new synthetic fibers' sprint for expanded consumer markets is a high hurdle—dyeing. Getting safely over that barrier is now the number one objective of a healthy segment of the chemical and process industries. Fiber manufacturers, dyestuff producers and textile processors all have a heavy stake in the race, are dead-set on a happy outcome.

. Balkiness of the entries, however, isn't helping any. Most of the new synthetics just don't take to dyes. Their chemical nature tells why. Dacron, Du Pont's condensation polymer of terephthalic acid and ethylene glycol, is relatively inert and hydrophobic. The same holds true for the acrylics (Dynel, Orlon, Acrilan), only more so.

Unlike cellulose and protein fibers, the synthetics don't swell appreciably in water, show little affinity for water-soluble molecules and ions. Consequently, established dyeing procedures designed mainly for cotton, wool, rayon, etc., simply cannot be wheeled over to a new stand and put to work on the synthetics.

In some cases, the old techniques can be altered to handle a specific job of dyeing; in others, only a wholly new approach fills the bill. In any case, the particular fiber, the dye, and the desired result weigh heavily in the choice of a method. No easy rule-of-thumb has yet been devised to guarantee results with all of the new synthetics.

It hasn't been easy, but progress has been made. Here's how the situation shapes up with respect to four of the new synthetic fibers.

**Dacron:** Despite Dacron's hydrophobic nature, continuous application of vat dyes in aqueous solution will in many cases give relatively wash-fast colors on the fiber. But chemical surface stripping tests show little actual penetration of the dye into the fiber. It's not dyeing in the true sense, merely a case of strong surface attraction.

To remedy this condition, promote better penetration, researchers have called upon Dacron's ability to form solid solutions with certain dyes. Solvents like monochlorobenzene, p-phenylphenol and benzoic acid promote this type of solution, boost color yield, light-wash-and crock-fastness when used in conjunction with acetate dyes.

Heat and pressure are additional allies of the dye researcher in his dealings with Du Pont's Dacron polyester fiber. Heat treatment of the fiber after dyeing with aqueous solutions of acid vat or certain acetate colors causes penetration and true dyeing. Pressure acts in much the same way.

Translated into practice, these principles are the basis of the three most successful systems for dyeing Dacron. The first is an aqueous system of dyeing with carriers like benzoic acid. The second is built around pressure dyeing without carriers. Du Pont says this has been accomplished with Dacron yarns and rawstock on machines adapted to operate under 15 pounds gage pressure at a temperature of 250 F.

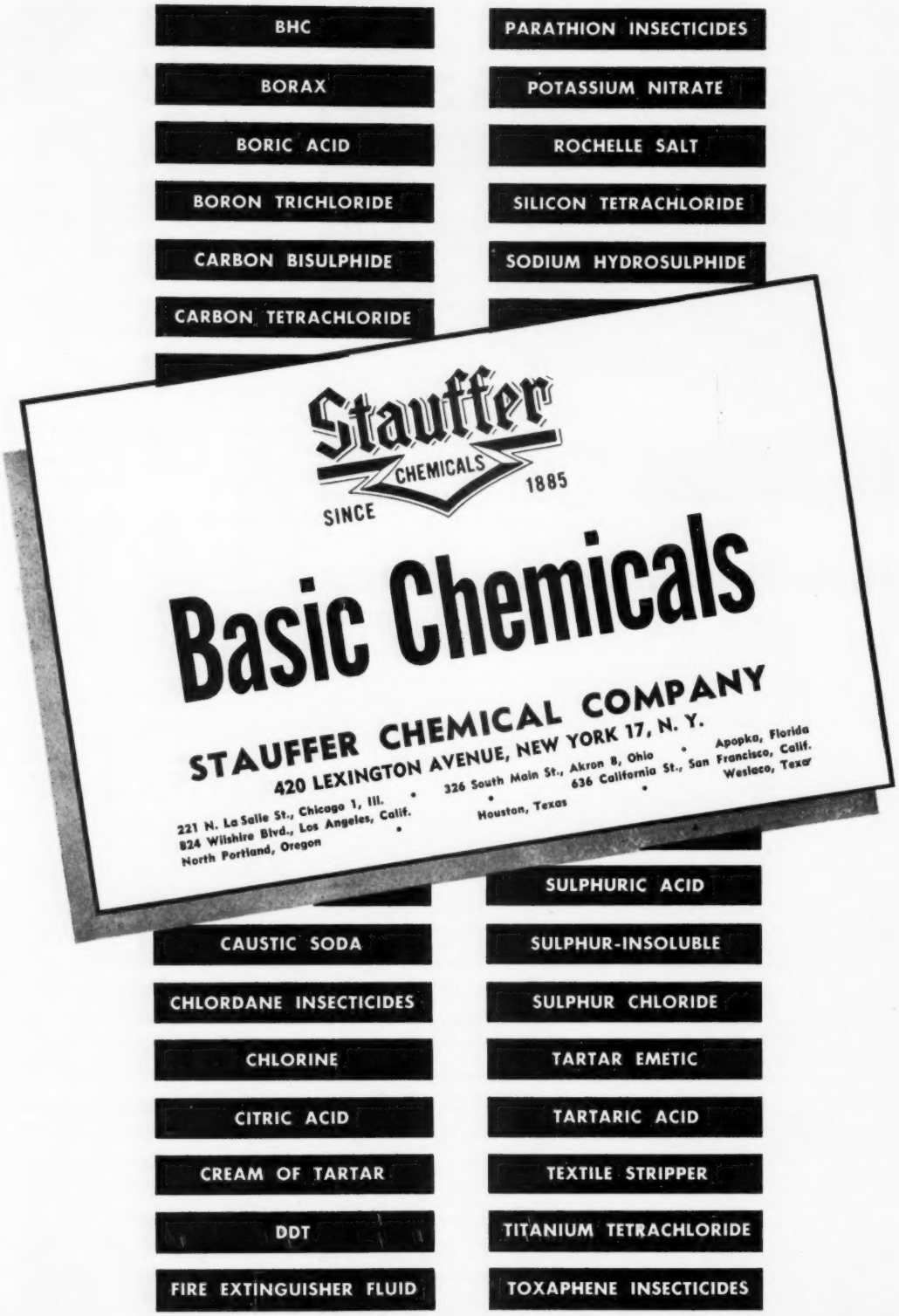
The third is the Du Pont Thermosol process by which selected acetate dyes and vat color pigments are applied by padding, then given a short heat treatment at high temperature to effect solution of the dye in the fiber. Developed originally for nylon, Thermosol—oddly enough—is reported to work better on Dacron.

Despite the striking progress made thus far, the book on Dacron isn't by any means closed. A recent discovery, that heat treatment without the use of chemical oxidizing agents causes leuco esters of many vat dyes to develop and penetrate the fiber, points the way to a simple leuco ester method of dye application.

**Acrylics:** If Dacron presented dyeing problems, they were at least problems that proved susceptible to judicious extension of tried-and-true dyeing practice. Unfortunately the same doesn't hold for the acrylics. Their inertness and hydrophobicity are notorious; dye molecules have little chance of gaining a foothold on the fiber. And their sensitivity to heat —Orlon and Acrilan yellow above 350 F, Dynel won't withstand heating above 235 F—is another not inconsequential stumbling block.

In short, conventional dyeing methods generally don't get to first base with the acrylics. Like every rule, this one has its exceptions. Acrilan (formerly Chemstrand) is modified by copolymerization with a resin which imparts to the fiber an affinity for acid colors.

Then too, General Dyestuff Corp. reports moderate success in dyeing Dynel piece goods by conventional methods using indigoid and anthraquinoid leuco-vat dyestuffs. Chemical


BHC
BORAX
BORIC ACID
BORON TRICHLORIDE
CARBON BISULPHIDE
CARBON TETRACHLORIDE
PARATHION INSECTICIDES
POTASSIUM NITRATE
ROCHELLE SALT
SILICON TETRACHLORIDE
SODIUM HYDROSULPHIDE
Stauffer
CHEMICALS
SINCE 1885
Basic Chemicals
STAUFFER CHEMICAL COMPANY
420 LEXINGTON AVENUE, NEW YORK 17, N. Y.
221 N. La Salle St., Chicago 1, Ill.
824 Wilshire Blvd., Los Angeles, Calif.
North Portland, Oregon
326 South Main St., Akron 8, Ohio
Houston, Texas
636 California St., San Francisco, Calif.
Apopka, Florida
Weslaco, Texas
SULPHURIC ACID
CAUSTIC SODA
SULPHUR-INSOLUBLE
CHLORDANE INSECTICIDES
SULPHUR CHLORIDE
CHLORINE
TARTAR EMETIC
CITRIC ACID
TARTARIC ACID
CREAM OF TARTAR
TEXTILE STRIPPER
DDT
TITANIUM TETRACHLORIDE
FIRE EXTINGUISHER FLUID
TOXAPHENE INSECTICIDES

swelling agents, also, have enjoyed a minor degree of success in Dynel dyeing.

Moreover, vat, acetate and basic dyes have an affinity for Orlon acrylic fiber and they may be expected to fit into special Orlon dyeing jobs.

But on the whole, something new was needed for the acrylics. Thanks to researchers G. H. Fremon and T. A. Feild Jr. of Carbide and Carbon Chemicals Co. that something is now known to be the cuprous ion.

The copper method (*CW, Nov. 24, '51*) today is definitely the method of choice for dyeing the acrylics. Just exactly how the cuprous ion does its beneficial work is not fully understood. Best theory to-date is that it forms a complex between the nitrile group of the acrylic fiber and the dye. But what the cuprous ion does is not open to debate: It gives the dyer a rapid, practical method of producing full shades on the acrylics with water-soluble acid and acetate colors.

And used in conjunction with a swelling agent like p-phenylphenol, the copper technique will usually give as deep a shade as is desired.

Developed primarily for Carbide's Dynel, the copper method is equally applicable to the other acrylics. Du Pont declares it's the best yet for Orlon. Du Pont tells CW that dyeing of Orlon with acid colors using the cuprous ion method has been successful in mill operations at temperatures near the boil and up to 250 F.

According to the company, "the method is now in use for dyeing Orlon raw stock, yarns and piece goods." Moreover it provides the closest approach yet devised to a continuous process for dyeing the new synthetics. A new continuous process for the application of cuprous ions to acrylic fibers, recently reported by the American Association of Textile Chemists and Colorists, is a substantial stride in the direction of all-continuous dyeing processes.

**Tipoff:** "Continuous" seems to be the tipoff on what's ahead for the researchers. Today the dyeing of the synthetics is a batch-wise affair. But in the face of mounting demand for the "miracle" fibers, rapid continuous dyeing methods are practically a must for the future.

•

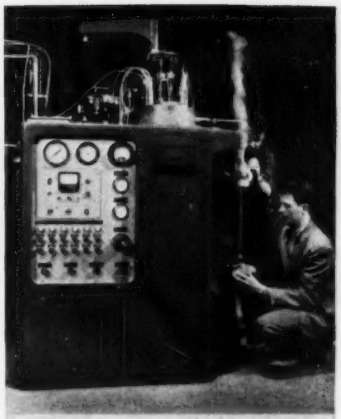
**Micro Assay:** New procedures for assaying dithiocarbamates in dust and spray formulations (and residues) is the news from researchers of Rohm & Haas Co. (Phila., Pa.). Both macro and micro procedures have been devised. The latter is based on the spectrophotometric determination of a characteristic yelloy complex.

•

**Two Down:** Latest in the research expansion program of Jefferson Chemical Co. is a proposed two-story labora-

## Redux On the Wing

**THE COMET, Britain's jet airliner which recently inaugurated the world's first commercial jet airline service, should be of more than passing interest to the chemical industry. Not a single rivet is contained in the plane's structure; the metal skin is resin-bonded throughout by means of the British-pioneered Redux process. Promotion of the process in this country is a good bet for the not-too-distant future.**

Transferring liquid helium to external dewar. A built-in test chamber also allows tests within the cryostat at controlled temperatures down to −271°C (within 2 degrees of absolute zero).

FOR RESEARCH AT TEMPERATURES NEAR

**ABSOLUTE ZERO**

**... the Arthur D. Little Collins Helium Cryostat**

For research at extreme low temperatures (approximately −271 °C), studies of magnetic properties of materials, superconductivity, metal properties, $He^3$ and $He^4$ properties, and many other projects, the ADL Collins Helium Cryostat is a proved instrument—easily and quickly installed.

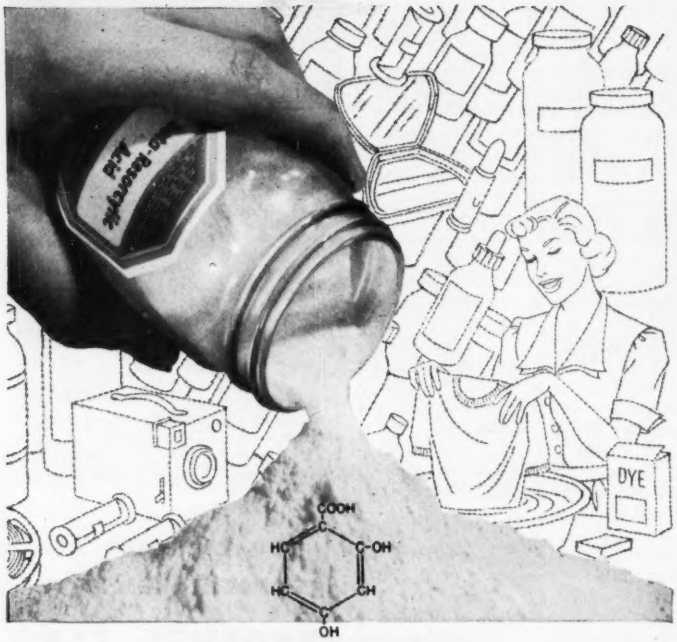
ADL Collins Helium Cryostats are now serving to extend basic and applied research in university, industrial, and government laboratories in the U. S., Canada, and Europe.

Essentially a low-temperature liquefier, the Cryostat . . .

—produces 4 liters of liquid helium per hour
—maintains temperatures down to −271°C
—liquefies gases such as $O_2$, $H_2$, and $N_2$
—requires no foundations for installation

WRITE FOR BULLETIN CW-1

ARTHUR D. LITTLE, INC.
*Mechanical Division*
30 MEMORIAL DRIVE, CAMBRIDGE 42, MASS.
RESEARCH • ENGINEERING • TECHNICAL-ECONOMICS
ADVANCED EQUIPMENT




# KOPPERS
# beta-Resorcylic Acid

● BRA is a derivative of resorcinol and salicylic acid. Its chemical properties combine the reactivity of both compounds.

As a starting material, it is useful in the production of dyestuffs, pharmaceuticals, photographic chemicals, cosmetic preparations and fine chemicals. Speciality dyestuffs derived from it offer interesting properties. As a starting point for resorcinol derivatives, BRA may have the substituent groups attached to the resorcinol nucleus at points different from those in the derivatives obtained directly from resorcinol.

**REACTIONS:** Decarboxylation of BRA yields resorcinol and carbon dioxide. This reaction is of value in the preparation of special derivatives of resorcinol. BRA is also subject to such reactions as halogenation, formylation, condensation, acylation, coupling, nitration, sulfonation, ether formation, esterification and mercuration.

## SPECIFICATIONS

| | |
|---|---|
| *Physical State:* | Crystalline Powder |
| *Color:* | White to Cream |
| *Purity, % BRA, minimum:* | 98.0 |
| *Melting Point, °C, minimum:* | 215 |
| *Moisture, % maximum:* | 1.0 |
| *Ash, % maximum:* | 0.5 |

KOPPERS

*For further information write to:*

**KOPPERS COMPANY, INC.**
**Chemical Division, Dept. CW-5-24**
**Koppers Building, Pittsburgh 19, Pa.**



tory building at Austin, Tex. Jefferson says the proposed new addition is the second of a series of planned research and development expansions.

●

**Line On Repellents:** A series of seven patent applications by the Secretary of Agriculture gives a line on progress in the development of new insect repellents. Among compounds cited as effective against the fly and mosquito are: N-aliphatic-substituted 4-methyl hexahydrophthalimides; furfurylideneacetone; 5-phenyl-2,2-dimethyl-1,3-dioxolan-4-one; 1-phenyl-1,2-ethanediol-2-propionate; lactones of 2-hydroxy-1-cyclohexenylacetic acid and 2-hydroxy-1-cyclohexylideneacetic acid; and the ethyl, propyl and butyl esters of 2-phenylhydracrylic acid.

●

**Hydrazine Tracer:** From behind the iron curtain comes word of a new Russian procedure for the determination of trace quantities of hydrazine. The method makes use of pink-violet color produced by the reaction of hydrazine sulfate and picryl chloride in aqueous alkaline solution.

●

**Two-Way Exchange:** William Lee Davidson, formerly director of physical research for B. F. Goodrich Co., now heads the newly-formed Office of Industrial Development of the Atomic Energy Commission.

Purpose of the new AEC arm will be to aid in the administration of the industrial participation program involving power generation studies, to expand those areas of atomic energy in which industry may be interested.

According to AEC general manager M. W. Boyer: "The Commission's program of industrial development will be a two-way exchange. We want to make sure that the developments in the national atomic energy program which may have application in industry are promptly made available to the people interested.

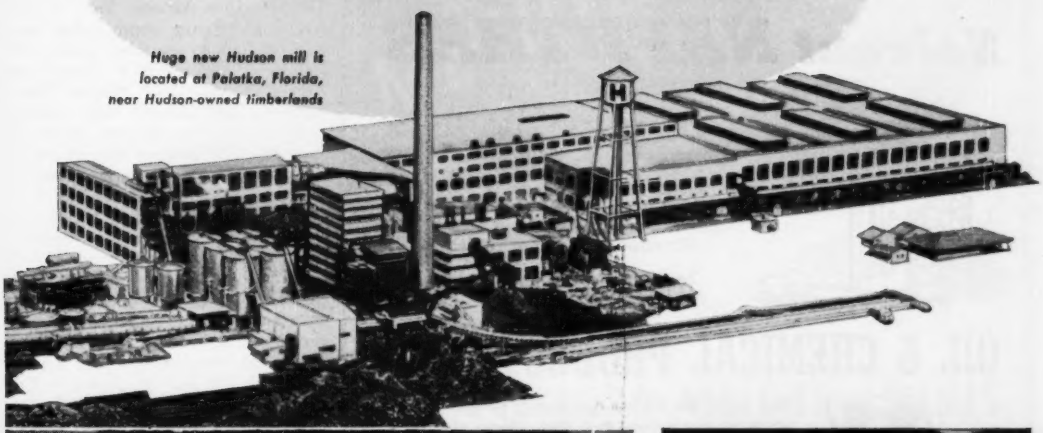
"Davidson's office will provide a point of contact with positive responsibility to foster wider industrial participation in the Commission's program and the development . . . of a more normal competitive approach to the problems and potentials of the atomic energy business."

●

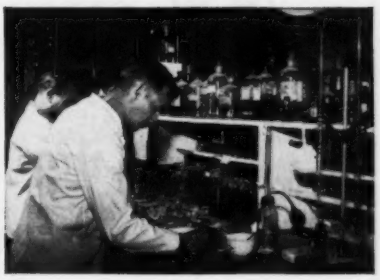
**Soya Dividend:** Soya Products Div. of Glidden Co. (Chicago) is now offering 29 steroids and sterols in research quantities. Of these, 16 already are in commercial production (including cortisone acetate, desoxycorticosterone, pregnenolone, progesterone and testosterone).

# How HUDSON'S new integrated mill benefits users of MULTIWALL SACKS

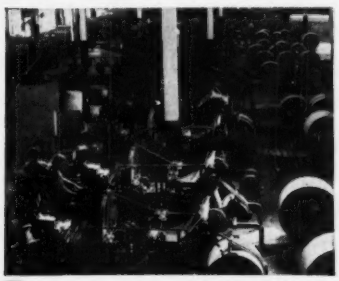
*Huge new Hudson mill is located at Palatka, Florida, near Hudson-owned timberlands*



**1 INTEGRATION = ASSURED DELIVERY.** Hudson's dispatch room can route your order for delivery by rail, truck, or water. Loading schedules are rigidly upheld, because Hudson uses no outside suppliers to create possible delays. Every step from tree to finished sack is under Hudson's exclusive ownership and control. And Hudson is big enough to be reliable.



**2 INTEGRATION = MORE UNIFORMITY.** A single laboratory control is over every step of manufacture. Variations from outside suppliers are avoided. Tests ensure consistently high quality.



**3 INTEGRATION = BETTER COST CONTROL.** An overall management holds costs down. Hudson's brand new mill also has the finest multiwall equipment made, to pass on to you savings in the form of better performance, better service, and competitive prices.

## HUDSON MULTIWALL SACKS

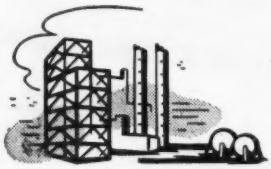
***Pasted and sewn—valve and open mouth***

**SEND TODAY**
*for informative literature.*
*Just drop us a note.*

**HUDSON** PULP & PAPER CORPORATION **Dept. 123, 505 Park Ave., New York 22**

O&C

TOLUOL
BENZOL—XYLOL
Solvent NAPHTHAS



Manufactured in our Houston Texas (Galena Park) plant

OIL & CHEMICAL PRODUCTS INC.

O&C

NEW YORK: 295 Madison Ave., Murray Hill 6-0785
HOUSTON: City National Bank Bldg., Charter 4747

For larger-than-laboratory amounts of

Rare* organics

*Biurea, for example

write to DPi

Eastman Organic Chemicals Department, *Distillation Products Industries,* 789 Ridge Road West, Rochester 3, N.Y. (Division of Eastman Kodak Company). There are more than 3500 regularly supplied Eastman Organic Chemicals for science and industry.

Also . . . vitamins A and E . . . distilled monoglycerides . . . high vacuum equipment

## RESEARCH . . . . . .

**New Corners:** To stimulate "exploration of new corners of science" the Du Pont Co. has pledged $40,000 to the University of California for fundamental research in chemistry during the next two years. The money is for the support of a broad program of fundamental research, not for any one specific project.

•

**First-Hand Look:** Southwest Research Institute (San Antonio, Tex.) is host to 19 Europeans, representing nine nations, here to see what makes U.S. industrial research tick. Object: to obtain ideas on how Western European nations can pool their research facilities for more effective service to industry. The group's tour of industrial, educational and private research laboratories in this country and Canada is being sponsored by the Mutual Security Agency under its productivity and technical assistance program.

•

**Tracer Cortisone:** Ample radioactive cortisone for research requirements is the cause the National Institute of Arthritis and Metabolic Diseases (of the Public Health Service) hopes to further with a fund of $66,000. The money, to be administered by a committee of scientists headed by Charles Huggins of the University of Chicago, will be used to bring together the starting materials, and finance manufacture of the tracer compound. Product will be distributed to qualified investigators on the basis of formal research proposals.

•

**New GRS:** A new synthetic rubber formula, GRS X-705, containing Dow Chemical Co.'s Styphen I antioxidant, has been authorized by Office of Rubber Reserve.

•

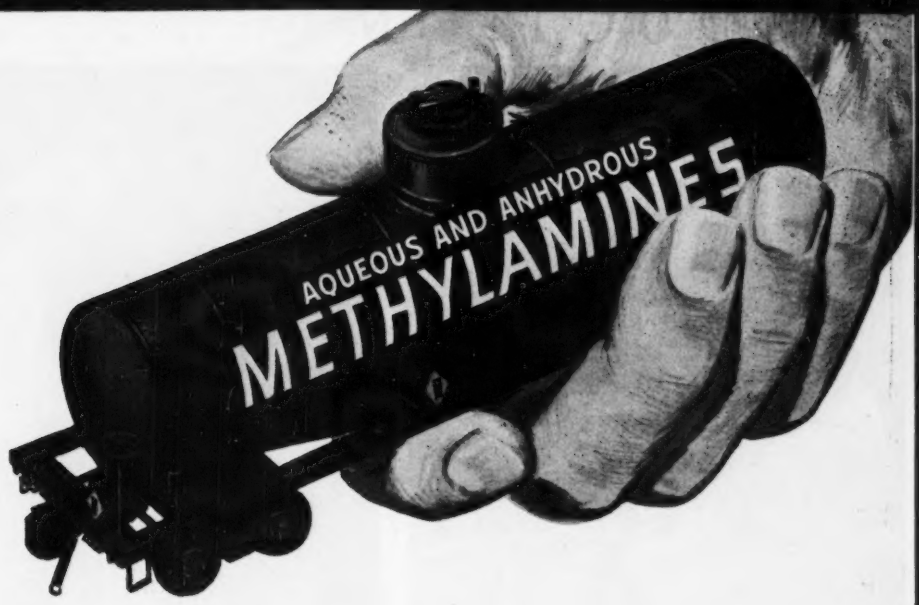
**Melamine on the Menu:** Bristol Laboratories has recently been awarded a patent (U.S. 2,577,698) covering melamine salts of penicillin. Because of their repository antibiotic action, relative insolubility and good stability, the melamine salts are proposed for use in animal feed supplements.

•

**Good Start:** More than 1,000 scientists and businessmen turned out at West Point (Pa.) for the recent dedication of Sharp & Dohme's spanking new $4 million medical research laboratories.

•

**Coming:** Look for the commercial debut of three new Emery Industries products soon. They're: 12-hydroxy stearic acid; hydrogenated castor oil; and a textile processing oil with antistatic properties.



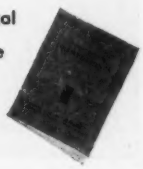

# LOW COST, LOW MOLECULAR WEIGHT AMINES AVAILABLE IN TANKCARS FROM TWO PLANTS

Because the methylamines combine low cost with low molecular weight, they are the most economical aliphatic amines on the market for the synthesis of organic nitrogen compounds. For this reason the list of uses for the methylamines has grown steadily since Rohm & Haas introduced them commercially in 1934.

All three amines—monomethylamine, dimethylamine, and trimethylamine—are shipped in both aqueous and anhydrous form, in drums, cylinders, or tankcars. They are produced at two different plants, assuring their continuing availability.

If you manufacture dyes, drugs, photographic chemicals, rubber accelerators, fungicides, bactericides, weed killers, quaternary ammonium compounds, or other organic nitrogen compounds, the Rohm & Haas methylamines should be considered as readily available, low-cost raw materials.

**For complete data on the physical properties of the methylamines, write for this 39-page booklet.**

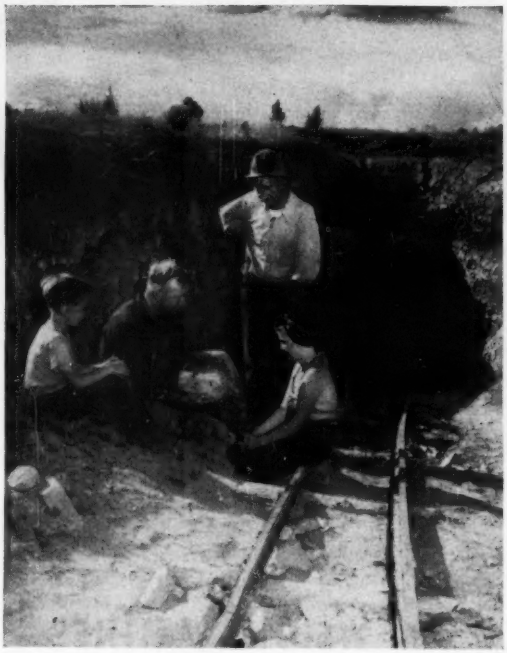


CHEMICALS FOR INDUSTRY

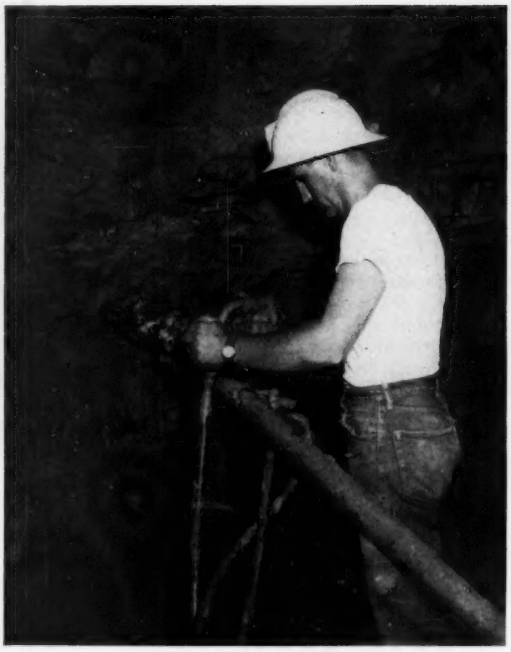
**ROHM & HAAS COMPANY**

WASHINGTON SQUARE, PHILADELPHIA 5, PA.

*Representatives in principal foreign countries*



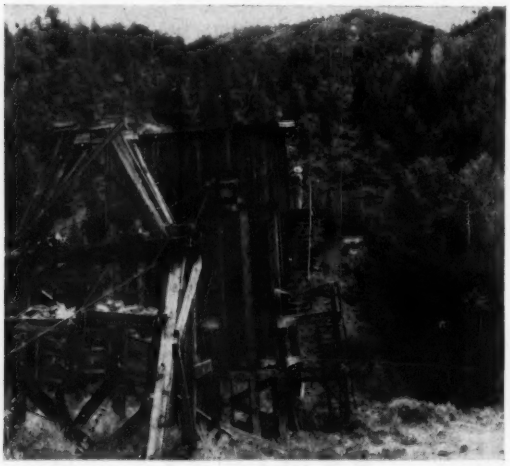
**INSTRUMENTS AND THEORY WILL** never completely replace "know how," say veteran carnotite miners. Here one of them gives a lesson in ore identification to his two youngsters.



**BUT THE PICK AND SHOVEL** and aching back have given way to modern tools. In the tunnel, a miner for the U.S. Vanadium Corp. works on a drift operation on Calamity Mesa.

# Uranium Bonanza in Colorado Hills

**To the public at large,** the word uranium conjures up visions of mushrooming clouds and atomic explosions. But to prospectors and miners on the Colorado Plateau—where the search for uranium is going on in earnest—it merely means an elusive, ill manered metal that runs in pockets instead of veins. Frank Mac Pherson (of the Atomic Energy Commission's Raw Materials Office, Grand Juction, Col.) has described the operation like this: "Spread a layer of white beans on the bottom of a tub. Toss in one or two blue beans. Cover the layer with a



**SANDSTONES** of the Colorado Plateau yield carnotite, source of uranium. Ore descends the mountainside in cablecars, . . .

**IS TRANSFERRED** to International trucks and carried to the mill. Trucks are specially built for heavy loads over rough roads.

# A REVOLUTIONARY NEW INSECT KILLER!

SYSTOX, a revolutionary new type of insecticide, has just been approved for the control of aphid and two-spotted spider mite on cotton. Unchecked, these killers could destroy the nation's cotton crop.

SYSTOX is the first true *systemic* insecticide ever approved for use in this country. Its dramatic method of control promises enormous new benefit to American agriculture. Absorbed and translocated through foilage and roots, SYSTOX renders plants highly toxic to many destructive insects for a considerable period of time.

Approval of SYSTOX for controlling these cotton insects climaxes three years of intensive research by the Pittsburgh Agricultural Chemical Company and its associate, Chemagro Corp., following its original development by Farbenfabriken Bayer, Germany. Results of this work indicate that SYSTOX...

... renders most plants toxic to insects three to four times longer than conventional insecticides.

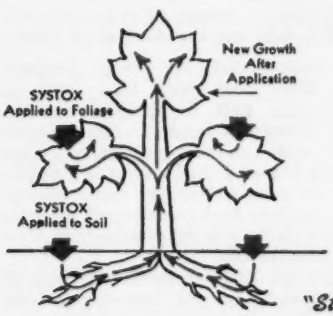
... is effective when applied in doses as small as one ounce of pure SYSTOX per acre.

... can be effectively applied to seeds before planting, thus protecting the young plants for a considerable period.

SYSTOX also appears to be effective in controlling many common insects which attack fruits, vegetables, grains, forage crops, sugar and tobacco, and its ultimate use on these crops is indicated. Research also indicates that only harmless traces of SYSTOX residue—measured in tenths of parts-per-million—remain in the harvested crops.

Approval for the initial use of this amazing new insect killer marks a significant milestone in the fight of this nation's great agricultural and chemical industries against destructive insects.

*Because of its vital importance, we are immediately making SYSTOX available to cotton growers in commercial quantities through our established outlets. SYSTOX will also be available to research organizations for experimental use on other crops.*




SYSTOX is absorbed through roots or foliage and translocated throughout plant structure, including any new growth developed after application.

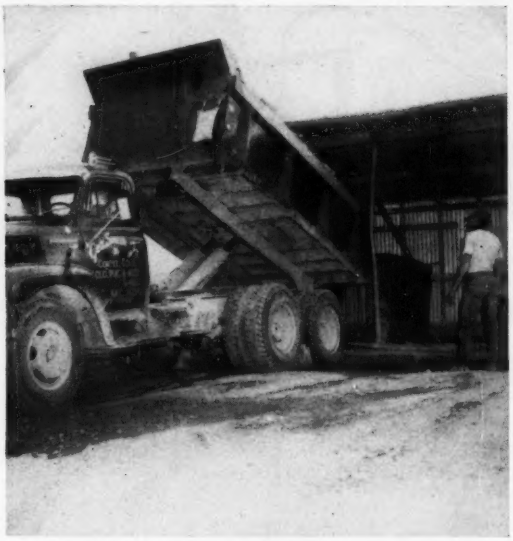
**PITTSBURGH AGRICULTURAL CHEMICAL CO.**
Empire State Building, New York, N. Y.

WAD 4203

A DIVISION OF
**PITTSBURGH**
**COKE & CHEMICAL CO.**
Grant Building • Pittsburgh 19, Pa.

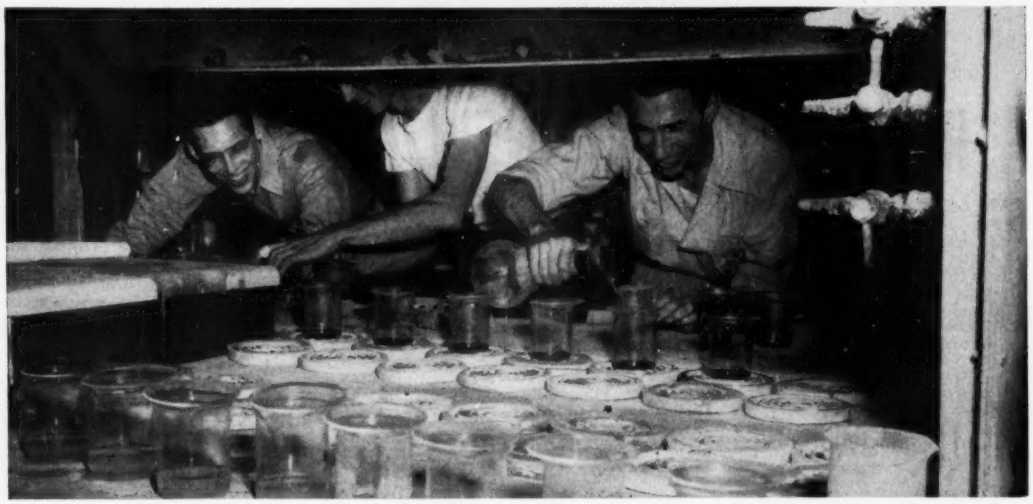
*"Standard for Quality"*

COAL CHEMICALS • AGRICULTURAL CHEMICALS • PROTECTIVE COATINGS • PLASTICIZERS • ACTIVATED CARBON • COKE • CEMENT • PIG IRON



AT THE MILL, trucks carry the carnotite up a steep incline beside the mill, empty their payloads into bins shown at right.

OPERATOR SHOVELS refined uranium into dryer where it will be converted from a black, sticky substance into a powder.



LABORATORIES ASSOCIATED WITH THE REFINING are reminiscent of medieval alchemy. Metallurgist Ralph Musgrove (center) runs a tricky ore analysis. Looking on—and assisting Musgrove—are John Crozier (left) and Quentin Kochner (right).

newspaper and repeat the operation until the tub is full. Now take a long hatpin, poke it through the layers and see how many blue beans you can hit. That's drilling for uranium."

Getting four tons of the desired element involves digging a mine one mile deep and processing some two and a half million tons of rock. There's also the problem of delivering ore mined on the plateau to one of seven scattered mills at Grand Junction, Rigle, Naturita, Uravan and Durango in southwestern Colorado and Monticello and Rite in southeastern Utah. The "roads" are rocky routes blasted out by dynamite or vague tracks twisting through talus and debris. Modern packhorses for the job are big six-wheel International trucks with hypoid-gear axles.

But despite the hardships, the inhospitable terrain and the relatively small return on uranium from the rock, Colorado carnotite has pushed the United States into second place as a uranium producer among the free countries. A measure of the boom that the uranium industry in the area has felt is the number of mines being worked (all by private business). They have grown from sixteen in April, 1948 to approximately 250. Where a hundred men formerly worked on the diggings there are now a thousand. And instead of a handful of trucks, there are scores of independent truck owners—each operating from three to ten carriers—to haul the tons of ore.

The AEC, of course, is still eagerly hunting for new sources of uranium. Meanwhile, the country's future in atomic development may lie in revolutionizing the processing of carnotite.

# 2 NEW

## Victor research chemicals *now available*

Derived from the Benzene Phosphorus Chlorides, Victor Benzene Phosphonic Acid and Benzene Phosphinic Acid are offered for your evaluation. The interesting properties of these two new compounds indicate usefulness in several commercial applications. Upon investigation, you may find them of assistance in helping to make new compounds you are seeking. Write for your experimental samples today, on your company letterhead. Our technical staff will be pleased to work with you.

### BENZENE PHOSPHONIC ACID

$(C_6H_5PO(OH)_2)$

M. W. 158 Sp. G. 1.475
M. p. 158°C Colorless crystals
Strong dibasic acid
Soluble in water, alcohol, ether
Insoluble in benzene
Stable in air
Forms metallic salts
Solubility in water at 25.5°C:
40.3 gm/100 gm water

**Suggested uses are for non-food applications, such as:**

Solid acid, intermediate for forming metallic salts used as anti-fouling agents in paints, catalyst for urea formaldehyde and related resins.

### BENZENE PHOSPHINIC ACID

$(C_6H_5PHO(OH))$

M. W. 142 M.p. 82-84°C.
Strong monobasic acid Colorless crystals
Soluble in water and alcohol
Slightly soluble in ether
Stable in air
Slight characteristic phosphine odor
Forms metallic salts
Oxidizes to the phosphonic acid with ordinary oxidizing agents such as hydrogen peroxide and nitric acid.
Solubility in water at 25.5°C:
7.7 gm/100 gm water

**Suggested uses are for non-food applications, such as:**

General Anti oxidant
To improve film properties of cured polysiloxane resins
Accelerator for organic peroxide catalysts

*MAIL THIS COUPON FOR EXPERIMENTAL SAMPLES*

**Please Check for Samples**

☐ Benzene Phosphonic Acid
☐ Benzene Phosphinic Acid

Name_____ Position_____

Company_____

Address_____

City_____ Zone____ State_____

(Clip to your company letterhead)

*Dependable Name in Chemicals for 54 Years*

**VICTOR CHEMICAL WORKS**

141 West Jackson Boulevard, Chicago 4, Illinois

**A. R. Maas Chemical Co., Division,**
**4570 Ardine Street, South Gate, Calif.**

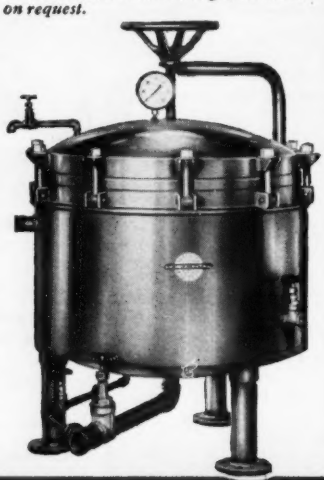
Few other industries require the painstaking supervision, accuracy, or sanitation that is necessary in the production of drugs used to perform "everyday miracles." Yet in spite of this, each of the companies whose trade mark is shown above, day after day, year after year, produces pharmaceuticals that *never meet anything less than the highest standards of purity.*

Of course, the plants operated by these companies are models of precision, planned to achieve the greatest possible efficiency with the finest equipment available. That's why, in each of these plants, you will find Sparkler filters handling difficult liquid filtration jobs.

It is important to remember that Sparkler filters were designed with the same goals in mind — accuracy and sanitation — that are accepted as a fundamental part of the drug industry. They utilize the patented Sparkler horizontal plate principle to provide firm support for the filter media and filter aid. This horizontal surface permits the formation of a stronger, completely uniform cake that will not slip or crack even under intermittent operation. Thus, filtration quality through the entire cake is constant, and can easily be regulated by varying the cake density.

Plates are assembled one above the other and are fastened together in cartridge form, making it extremely simple to remove them from the filter for cleaning. Other Sparkler features include compact, neat design, high flow rates and low operating cost.

*For full information, write to Mr. Eric Anderson. New catalog is available on request.*



SPARKLER MANUFACTURING COMPANY, Mundelein, Illinois


PRODUCTION . . . . .

## Ready to Go

**After 3 years of development** work Peerless Pump Div. (Los Angeles) is ready for volume production of its magnetic pump. The pump is leakproof, has no rotating member between driven and liquid ends, no rotating seals and no packing. Power is transmitted from motor to impeller by a magnetic drive.

Applications of the new pump will center around processes where a closed system of liquid flow is necessary, where air or bearing contamination cannot be tolerated or where leakage is a major problem. Fluids already handled successfully include ammonia, dry chlorine, organic acids and water.

Geometric and magnetic considerations limit the size of the pump to 2 hp or less. The fact that liquids handled by the pump must also lubricate its bearings places a further limitation on possible applications. Relatively high production costs, about four times those of conventional pumps, might also be considered a limiting factor.

•

**Plant Meter:** The Rotocycle 6 BLX, a new bulk plant meter has been developed by Rockwell Manufacturing Co. (Pittsburgh). This 6-inch rotary, positive displacement meter was designed primarily to inventory withdrawals of aviation gasoline. Rockwell claims, however, that the meter could have application in chemical and other industrial operation.

The 6 BLX meter is available with aluminum casings which weighs 207 lbs. as compared for 417 lbs. for cast steel and 400 lbs. for cast iron. It is designed for continuous operation at pressures up to 125 psi and flow rates to 650 gpm. At the maximum rated capacity of 650 gpm, the pressure drop across the meter on aviation gasoline is less than 2.2 psi and measurements are claimed to be 99.95% accurate.

•

**Differential Colorimeter:** Manufacturers Engineering & Equipment Corp. (Hatboro, Pa.) is now marketing its new "Colormaster Differential Colorimeter" for color measurements on synthetic fibers, paints, pigments and solutions.

Three color filters give approximations to the I.C.I. X, Y, and Z functions and transmissions are measured directly. A complete set of color measurements can be made in about 30 seconds. The instrument is claimed to be highly stable after a warm-up of about 30 minutes, is vibration-proof, is not subject to humidity effects and requires very little maintenance.

**FAIRBANKS-MORSE DIESELS CAN ELIMINATE YOUR**

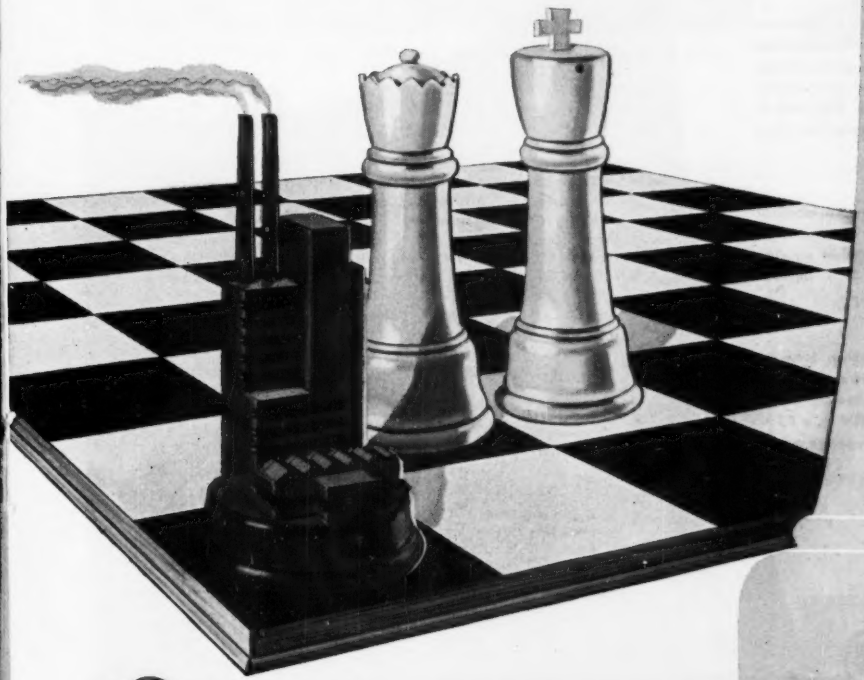
# Power Checkmate

Poor power factor, adverse current characteristics, surge loads . . . any one of these conditions can put your plant in a power checkmate. You are then paying a penalty that can mean the difference between profit and loss.

**What's the Next Move in *Your* Plant?**

Look at your power problem. Then look at this representative list of advantages brought to you by Fairbanks-Morse Diesel power generation. These are *proved* answers to your problem . . . based on over 50 years' experience in industrial and municipal power generation.

If power has you in a checkmate, write us today, outlining your problem. Fairbanks-Morse Engineering can help decide your next move to put power costs and performance in order. Fairbanks, Morse & Co., Chicago 5, Ill.



## Put Your Power Costs and Performance in Order

1 ***Handle Peak Demand*** . . . reduce peak demand values for lower purchased power rates.

2 ***Power Factor*** . . . in-plant power generator can eliminate power factor penalties.

3 ***Emergency Power*** . . . insurance against lost production and damage resulting from line failures.

4 ***Handle Surge Loads*** . . . that may now be affecting current characteristics of entire plant.

5 ***Plant Expansion*** . . . need not be restricted due to lack—or expense—of ample power.

6 ***Useful Heat*** . . . lube oil, water and exhaust heat can be turned from waste to profit.

7 ***Chemical Value*** . . . exhaust gases are high in free nitrogen—available for economical fixation of nitrates, ammonia, etc.

8 ***Insurance Advantage*** . . . of diesel over gasoline engine, for example, will soon pay for installation.

9 ***No Weather Worries*** . . . ice, snow, sleet, wind storms can't stop plant operations.

10 ***Handle Increasing Load*** . . . in-plant power economically adds to current capacity as loads increase.

11 ***Fuel Economy*** . . . use diesel oil, natural gas or sewage gas for added economy.

12 ***Remote Locations*** . . . distance from transmission lines needn't curtail plant expansion.

13 ***More Compact Power*** . . . Fairbanks-Morse engines give you more power per foot of floor space, more power on present foundation.

14 ***Minimum Attendance*** . . . Fairbanks-Morse in-plant generating sets require far less supervision or maintenance.

15 ***Save Cost*** . . . of running in new line where present transformers and power lines are already loaded.

**FAIRBANKS-MORSE,**

***a name worth remembering***

DIESEL AND DUAL FUEL ENGINES • DIESEL LOCOMOTIVES • ELECTRICAL MACHINERY • PUMPS • SCALES • RAIL CARS • MAGNETOS • FARM-MACHINERY

# Why you're SAFE when you use ONYX QUATS!

**1. They're Tested for Toxicity!**

**2. They're Uniform Chemical Compounds!**

**3. They Do Not Deteriorate in Storage!**

**4. They've Been Widely Field-Accepted!**

### BTC*

**Alkyl dimethyl benzyl ammonium chloride. The most widely used cationic bactericide and deodorant. Sold in 50% aqueous solution to disinfectant and germicide manufacturers for dilution and/or incorporation in their own products.**

### TETROSAN

**Alkyl dimethyl 3,4 dichloro benzyl ammonium chloride, plus alkenyl dimethyl ethyl ammonium bromide. In extensive use as a disinfecting, deodorizing and preventive antiseptic in veterinary and livestock medicines. Also used in pharmaceuticals for topical applications. Sold in 60% aqueous solution.**

### ISOTHAN Q15*

**Lauryl isoquinolinium bromide. An excellent fungicide. Widely used in the formulation of compounds for use in the control of athlete's foot and dandruff. Sold in 20% aqueous solution.**

### ONYXIDE*

**Alkenyl dimethyl ethyl ammonium bromide. The most effective algaecide now available. In wide use in swimming pools, cooling water, air-conditioning systems, etc. Sold as a 75% concentrate in isopropanol or propylene glycol.**

*Trade Mark Reg. U.S. Pat. Off.

Onyx has always been a leading factor in the production of quaternary ammonium salts. We make a greater variety of these compounds than any other manufacturer. Some of these are of interest to research departments. Others are used in highly specialized fields. Four of the Onyx Quats, however, are of broad interest in the field of sanitization, algae control, fungicidal treatments and deodorization. Each of these four Onyx Quats has been tested for toxicity and proved for application values in the fields to which they apply. They are listed in the column at the left.

If you are interested in any one of these particular "quats," please ask for data. Onyx BTC is covered in a very thorough technical handbook which also outlines the major characteristics of the quaternaries.

onyx

**ONYX OIL & CHEMICAL COMPANY**
**INDUSTRIAL DIVISION**
182 WARREN ST., JERSEY CITY 2, N. J.
CHICAGO • BOSTON • CHARLOTTE • ATLANTA
In Canada: Onyx Oil & Chemical Co., Ltd., Montreal, Toronto, St. Johns, Que. For Export: Onyx International, Jersey City 2, N. J.
West Coast Representative: E. S. Browning Co., San Francisco, Los Angeles

ADDING POLYACRYLATES: Makers of soil conditioners dig in for a battle.

# Rhubarb in the Gardens

Soil conditioners—chemicals used to improve the physical properties of soil—almost overnight have become the hottest thing in agricultural chemicals.

Acrisoil, Agrilon*, Fluffium, Krilium, Poly-Ack, Soil Life are some of the trade names being spread across gardening pages of papers as formulators vie for a seemingly insatiable market. Already price cutting has begun.

The fight's still wide open; several more big chemical producers are about to take the wraps off their entries. And a patent battle looms.

**The battle** to garner the gardener's dollar with soil conditioners began like this:

In the *New York Times*, Sunday, April 6, Wilson Organic Chemicals (Sayreville, N.J.) ran a four-column ad offering Poly-Ack, the "widely publicized new chemical discovery" for improving the tilth of soil (*CW, April 19*).

Within two weeks, Dreer's of Philadelphia was advertising a similar product, Fluffium, and a short time later, Acrisoil was loudly proclaimed by the Acrisoil Co. (Newark, N.J.).

Then the word was that American Cyanamid was warming up "X-19" another polyacrylate soil conditioner; and that American Polymer Corp. (Peabody, Mass.) was readying Agrilon.

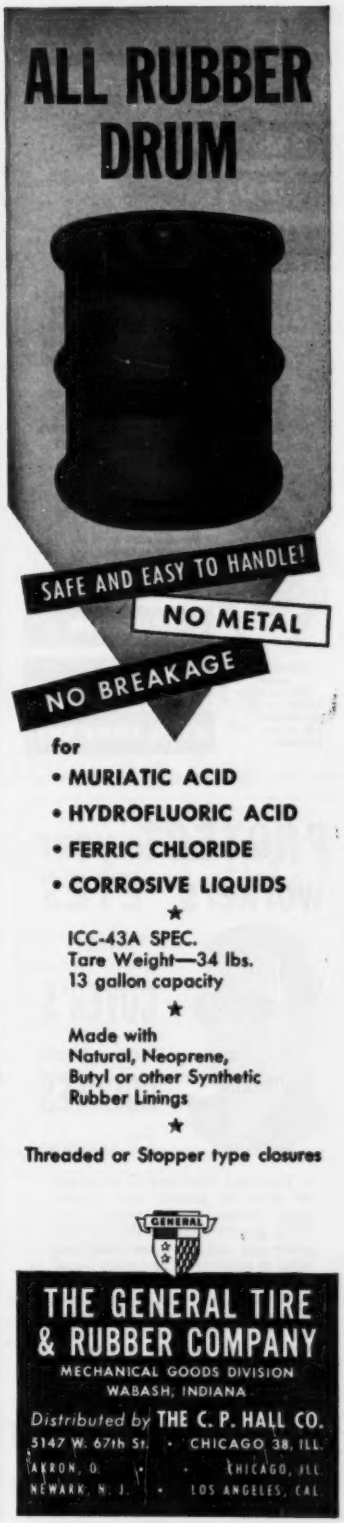
It began to appear that Monsanto, whose Krilium had practically started the soil conditioning business, was in for a rough tussle.

**Merloam to the Rescue:** But last week gardeners were getting their Krilium by mail, in Monsanto's Merloam formulation, five pounds for $6.95 (*CW Newsletter, May 10*).

As it had done when it first unveiled Krilium last December, Monsanto gave its Merloam formulation plenty of publicity† and pointed out that it

* New name for American Polymer Corp.'s product, introduced just last week as "Acrylon."

† The word got overseas; May 8 issue of the English journal, *The Financial Times*, carried a story on it.

Go the scientific way...go MGK

**Insecticide Concentrates for**

**AEROSOLS**

**DUSTS**

**SPRAYS**

We offer *complete formulas* . . . ready to put right into your aerosol bombs or your retail packages or . . . *combinations* of insecticides and synergists that leave you only the minimum of processing to do or . . . the purest toxicants and synergists *in their primary forms.* MGK has the *best* of whatever you want.

*Scarabaeus sacer*
Sacred beetle
Model for Egyptian carved stone amulets and scarabs.

THE PIONEERS OF
DYRETHRUM AND ALLETHRIN

*For complete information write 1709 SE 8th St., Minneapolis, Minnesota*

**McLAUGHLIN GORMLEY KING COMPANY**

**PROTECT your workers' EYES**

*with*

**COVER'S**

*"Nod & Shake"*

**GOGGLES**

*$2.00 a pair*

• They have been used by thousands for years to protect eyes against gases, dusts, fumes, smoke, etc. These goggles are gas-tight and fog-proof and can be worn with any make of respirator. The frames are of soft, pliable rubber that gives an air-tight fit on any face. A few drops of water in patented groove keeps fog from forming on inside of single lens . . . an easy nod or shake of head keeps lens clear indefinitely.

Let us send particulars on this and other DUPOR Safety Equipment.

**H. S. COVER**
STA. "A", SOUTH BEND, IND.



"has taken legal steps to protect its position as originator . . . of the product."

Krilium will be available by June through dealers, Monsanto said. Its aim in mail order sales is to get Krilium—Monsanto's first consumer product to be sold nationally—to the gardener this season. Already dealers (Brecks in Boston, Vaughan's in Chicago, Masbach Inc. in New York, and Associated Seed Growers in Philadelphia are among the first) are signing up; Brecks was offering the Merloam formulation itself last week.

**Price Tussle:** Though Krilium is being offered at $6.95 for five pounds, the price of the other soil builders varies. Wilson originally offered a gallon of its Poly-Ack for $18. Dreer's, reportedly selling a Wilson compound, also put its gallon price at $18.

But when Acrisoil was put on the market, it was priced at only $9.95 a gallon. (Acrisoil is said to be an American Polymer product. American Polymer is now producing its Agrilon, for distributors only, offering a 15% active-content liquid, a 25% powder, and a 100% powder.)

Last week Dreer's almost halved the price on Fluffium and now faces the problem of finding a supplier that will sell it raw material cheap enough to permit it to continue to sell at that price.

**Plump Market:** The public seems to be buying all the soil conditioners available. Major promotion salvos have been fired in the East, although Dreer's and Acrisoil have been offered in Chicago and Detroit, and Monsanto has received nation wide publicity for Krilium. There appears little activity on the West Coast yet, since the growing season is already underway there.

No one will make a prediction as to the size of the initial market, but all the manufacturers are lining up dealers. Besides Monsanto's and American Polymer's outlets, Wilson claims about 20 distributors now, and Dreer's and Acrisoil are asking for jobbers and dealers.

**Beats Peat:** The heavy demand for these soil conditioners has been nurtured by vigorous promotion. Blurbs tell of how a few pounds do the work of bales of peat moss and manure, without the backbreaking work of spading in. They "eliminate garden drudgery" and a "single treatment lasts for years."

Much of this is an extension of the claims made by Monsanto when Krilium was introduced. And most use illustrations strikingly like Monsanto lab photos. Briefly, the sodium polyacrylate appears to agglomerate the fine particles in clay soils into pea-sized lumps, which aren't broken up by rain, and which produce an aerated soil with greatly improved workability. Numerous compounds have been tried for this purpose; silicones appeared of value in tests done by Iowa State College, though the cost was prohibitive.

A very small quantity of the acrylates did the job, Monsanto's tests showed. To make a prime green house soil, Monsanto recommended about 0.02-0.1% soil conditioner on the basis of soil weight. Monsanto figures a cubic foot of soil weighs about 90 lbs. The application, then comes out to about 0.018-0.09 lbs. (0.06 average) per cubic foot. To treat 100 sq. ft. to a six inch depth, using the average figure, would require roughly 2½ lbs of the sodium polyacrylate.

**Dosage Debate:** Using Monsanto's figures (as do some of the outfits), how do directions for use of these various products stand up?

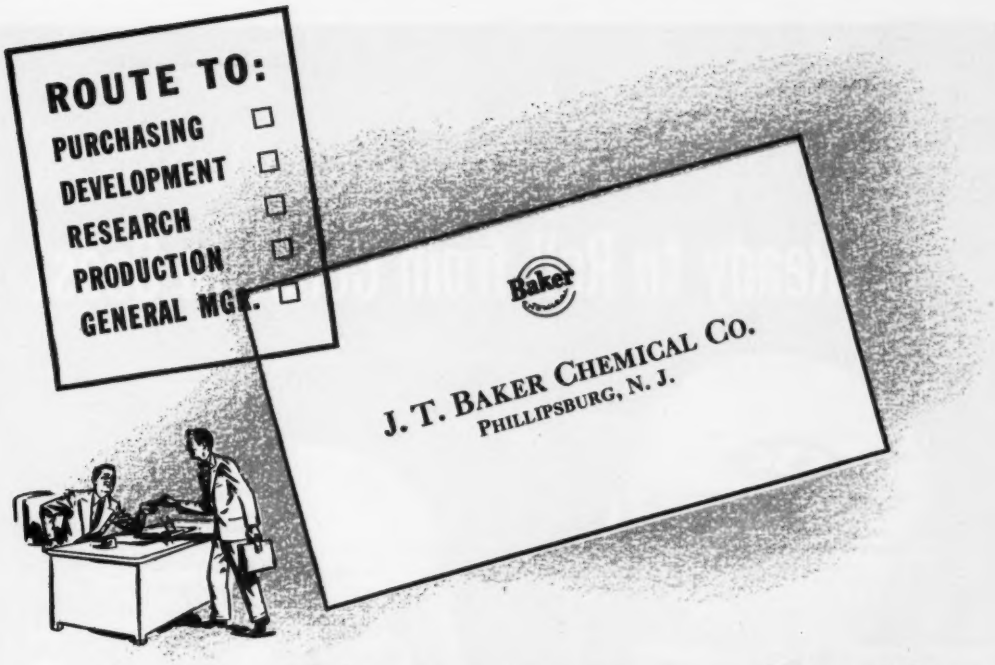
Monsanto says five pounds of its Merloam are good for 80 square feet to a three inch depth. That's 20 cubic feet, which should require (at 0.06 lb/cu. ft.) 1.2 lbs of sodium polyacrylate. Quite possibly, then, Monsanto, fearing that the gardener would apply the stuff haphazardly, wanted to guard against too heavy use, has set its Krilium content accordingly.

Wilson, Dreer's, and Acrisoil produce a liquid form of the resin, admittedly about 20% solids. A gallon of this, 8-9 pounds, is recommended for 1000 sq. ft. treated to a three inch depth. It figures out to about .4 lb of sodium polyacrylate for 250 cubic feet. And 250 cubic feet, by Monsanto figures, would require about 15 lbs of pure Krilium.

**Test Background:** To back up the directions on their packages, all outfits claim field tests. Dreer's and Wilson claim numerous tests privately conducted, but don't claim to have farmed their material out to State and Federal experiment stations. Acrisoil and American Polymer are in similar positions.

Monsanto is in the best place to back its claims. At the time it first made Krilium commercially available on a limited scale, it had completed extensive tests. Well over two dozen State agricultural station and USDA projects had been run, in addition to about 40 trials on various phases of Krilium use.

There can very easily be a wide variation in the effectiveness of the various polymers of hydrolyzed acrylonitrile. And perhaps top grade greenhouse soil is not needed by the amateur gardener. All are offering money




# This company may be able to help you...if you're looking for TONNAGE CHEMICALS of CONTROLLED PURITY

These are fast-moving, *demanding* days for many manufacturers.

Any morning, a purchasing agent may be confronted with some new, unexpected request . . .

"Where can we get this *particular* chemical? It must meet certain specifications—and we need it in tonnage."

Knowing where to turn quickly at such times—knowing that there is a company you can depend upon to help you meet your problems—is very satisfying.

Many product development groups are submitting their chemical problems to the Baker man, especially when tonnage chemicals are required with small and exacting tolerances.

Oftentimes, Baker has that *particular* chemical—of the highest purity—right in its line. If not, Baker can make it to your specifications, provided the tonnage required is large enough.

We'd be glad to help you—if you have problems involving tonnage chemicals of high purity. Simply write to J. T. Baker Chemical Co., *Executive Offices and Plant*, Phillipsburg, New Jersey.

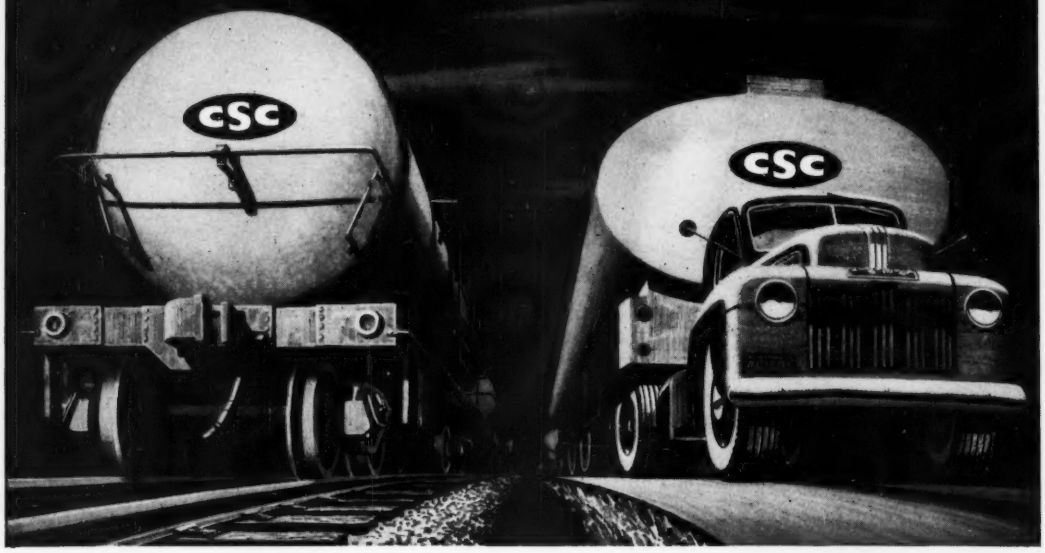
Baker CHEMICAL

## Baker Chemicals

REAGENT • FINE • INDUSTRIAL

# CSC ETHYL ALCOHOLS and DERIVATIVES

# ...Ready to Roll from Coast to Coast




Usage for industrial alcohols has reached an unparalled level during the past decade . . . creating a demand that Commercial Solvents Corporation, a pioneer in alcohol research and production, has answered by producing more ethyl alcohols and derivatives for the chemical industry.

Over the supply lines of America move the CSC fleet of tank cars and tank trucks, bringing these essential chemicals to industry from its nationwide network of strategically located plants and distribution points...ready to offer you unsurpassed service.

CSC ethyl alcohols are available in all formulas and grades to meet the most exacting requirements of the pharmaceutical and industrial trades.

**ALCOHOLS**

**Rossville Hexagon® Cologne Spirits**
**Rossville Aigrain® Alcohol U.S.P.**
**Rossville Gold Shield® U.S.P.**
**Shellacol®**
**Quixol®** **Quakersol®**

**DERIVATIVES**

**Ethyl Acetate • Diethyl Maleate • Acetaldehyde**

Write or phone Commercial Solvents Corporation, Industrial Chemicals Division, 260 Madison Ave., New York 16, N. Y. for full information.

| | |
|---|---|
| Butanol | Aminohydroxy Compounds |
| Butyl Lactate | Riboflavin Crystals |
| Butyl Acetate | Hydroxylammonium Salts |
| Butyl Stearate | Nitroparaffins |
| Dibutyl Phthalate | Formaldehyde N.F. |
| Tributyl Phosphate | Pentaerythritol |
| Methanol | Acetone |
| Ammonia | Methylamines |

INDUSTRIAL CHEMICALS DIVISION

# COMMERCIAL SOLVENTS CORPORATION

ALDEHYDES • ALCOHOLS • ESTERS • AMINES • AMINOALCOHOLS
AMMONIA • NITROPARAFFINS • SOLVENTS • PLASTICIZERS • INTERMEDIATES

back guarantees (not an unusual device) and are backing their products with the reputation of their firms.

**Same Start:** As the situation stands now, probably all of the makers of these soil conditioners are starting with acrylonitrile (supplied by American Cyanamid in all likelihood), polymerizing and hydrolyzing it to the sodium salts.

In addition to those products already on the market, several other firms have indicated a deep interest in either the manufacture or sale of the artificial humus gums. Rohm & Haas cautiously admits it is "selling polyacrylates," American Cyanamid has one on the way (called X-19 now, it is awaiting a trade name), and B. F. Goodrich has long worked on chemical soil stabilization.

Nott Mfg. Co. (Mt. Vernon, N.Y.) has a name, Soil Life, but hasn't disclosed its source yet, though the product is due on the market by mid-June. Cosmopolitan Sales Co. (New York) is apparently looking for a supplier, too.

Monsanto, incidentally, probably won't be in full production of Krilium until its Texas acrylonitrile plant comes onstream early in '53.

How big a business sodium polyacrylates for soil conditioning will be by that time is anybody's guess. One indication: Monsanto once estimated it could turn out 20-30 million pounds of Krilium per year.

It's no surprise, therefore, that companies are risking legal battles to gain a foothold in the field.

## Chemical Comics

**Cartoon advertising is fairly common; comic books have been used to plug nearly everything from politicians to parathion. This week, Stauffer Chemicals' Northwest Division, a trifle startled by the success of its new comic book on agriculture chemicals, is considering a second book.**

The idea for a comic book on its chemicals was presented to Stauffer last fall. And at first, it got a rather cool reception; though the company does a lot of direct mail advertising, the idea of a comic book seemed to be a little extreme.

But the Simon and Smith Agency (Portland, Ore.) handling Stauffer's advertising was able to get a go-ahead by this reasoning: The farmer, or perhaps his son, would hang onto the book, maybe read it during lunch. Chances are against an ordinary brochure getting that attention.

Stauffer's Northwest manager, Dan Keating, and the agency prepared the book. To keep it accurate, two company entomologists, R. D. Eichman and Lee Sturgis, wrote the "balloons."

In 16 pages, the book presents the story of a city teen-ager who visits his country uncle. During the visit, "Uncle Sam" shows the lad about the farm, in the process mentioning most of the Stauffer products and how they have boosted or saved crops, improved fishing, aided livestock and bettered poultry. In short, the story of how chemistry is revolutionizing farming.

Jack Myers (Associated Designers, Portland) handled the artwork; the Portland Daily Journal of Commerce printed it. Some 100,000 copies were turned out, and nearly all have been mailed.

Stauffer picked its mailing lists from various apple and nut growers' associations, *Better Fruit* magazine, and it own lists. Dealers ordered all they could handle, and some requests ran into the hundreds.

Response has been heavy, and 90% favorable. State and Federal experiment stations seemed to like the book, and it appeared to get the readership the agency foretold.

Keating estimates the cost of the book at about 6¢ per copy, the most expensive piece of promotion Stauffer has done. But results have been so good that in spite of the cost, the company may put out a sequel.

•

**Three in One:** Paint, plaster, and color in one operation are offered by a new product of Enterprise Paint Mfg. Co. (Chicago). Called Paint-O-Plast, the product is said to cover wood, cement, brick, wall board and most other surfaces, usually without a priming coat.

•

**New Detergents:** Stepan Chemical Co. (Chicago) is marketing three new liquid synthetic detergents, LD-100, LD-200, and LD-300. These are concentrates, to be diluted and perfumed for household sales. Ingredients: fatty alcohol sulphates, alkyl aryl sulfonates, and foam stabilizers.

•

**Corrosion Control:** Nielco Laboratories, (Detroit) is introducing its new corrosion control process called Nielizing. The new process, for ferrous metals, three stages: (acid surface conditioner, rinse, and fixing bath) produces a cleaned surface suitable for plating or coating.

•

**Red Peril:** Toothpaste makers in the U.S. are facing competition from an English product, Gordon-Moore Ltd.'s (London) Ruby-Red. With a red vegetable dye, it is said to tint gums pink,

NO longer in the laboratory category of scientific curiosity, Lithium has achieved the status of a new industry through the medium of applied research. Lithium's commercial significance embraces field after field. The amazing increase in usage of Lithium and Lithium chemicals has been possible largely through the extensive development work of Metalloy Corporation, basic to this fast-growing industry.

LOOK TO METALLOY—Supplier of 7 Forms of Lithium Metal—17 Lithium Compounds

Supplied experimentally or commercially . . . Metal—Ingot-Cup-Shot-Rod-Wire-Ribbon-Cartridge

COMPOUNDS

Aluminate-Amide-Borate-Bromide-Carbonate-Chloride-Caballite-Fluoride-Hydride-Hydroxide-Manganite-Nitrate-Nitride-Silicate-Thianate-Zirconate-Zirconium Silicate

If it's LITHIUM—it's METALLOY!

Write Dept. A for Data Sheets

LITHIUM CORPORATION of America

METALLOY CORP., Division
Rand Tower
Minneapolis 2, Minnesota

ANIMAL OILS

VEGETABLE OILS

FATTY ACIDS

AND HEAVY CHEMICALS

Welch, Holme & Clark

COMPANY INC.

439 West Street, N. Y. 14, N. Y.
Warehouses in N. Y. and Newark, N. J.

Technical Naphthas
& Petroleum Solvents
Amsco-Solv Aromatic Solvents
Amsco Hexane
and Heptane

AMSCO

AMERICAN
MINERAL SPIRITS
COMPANY
NEW YORK · CHICAGO · LOS ANGELES

Service in 48 States

Offices in 24 principal cities

SUNSHINE STATE POTASH
A PRODUCT OF NEW MEXICO U.S.A.
Reg. U. S. Pat. Off.

HIGRADE MURIATE OF POTASH
62/63% $K_2O$
GRANULAR MURIATE OF POTASH
48/52% $K_2O$
MANURE SALTS 20% $K_2O$ Min.

UNITED STATES
POTASH COMPANY,
INCORPORATED
30 Rockefeller Plaza,
New York 20, N. Y.

## SPECIALTIES. . . . .

give an added whiteness to the teeth. Sold for 75¢ per 1¼ oz tube, it is being test sold in some New York and Texas markets.

•

**Keep 'Em Bright:** Alumi-gard Co., (Chicago) is now selling a protective lacquer for aluminum storm windows, to keep them bright and shiny. Said to last a year, it sells for $1.39 per pint. Test sold in Chicago; now available nationally by mail.

•

**Cream and Sugar, too:** A 5% methoxychlor dust for strawberries has been recommended by Oregon State College entomologists as a spittlebug control. Dosage: 50 lbs./acre.

•

**Industrial Deodorizers:** Fuld Bros., Inc. (Baltimore, Md.) is introducing a new series of units employing Westinghouse high-ozone Odor-out lamps for industrial installations.

•

**Better Grip:** Grip-Kote, a rubber-based coating compound for foam rubber, cork, fiberboard, etc., is being marketed by Adhesive Products Corp. (New York). Typical use: To provide a better wearing surface for sponge rubber shoe soles.

•

**Water Repellent:** Stonhard Stonseal is a new sealing compound for above grade masonry. Silicone-based, it is produced by Stonhard Co. (Philadelphia).

•

**Polystyrene Paint:** A new organic coating for polystyrene, tabbed Styrophane, is being introduced by Standard-Toch Chemicals, Inc. (Staten Island, N. Y.), Designed to withstand high humidity, the coating can be spray-applied, is available in clear, pastels, and metallic colors.

•

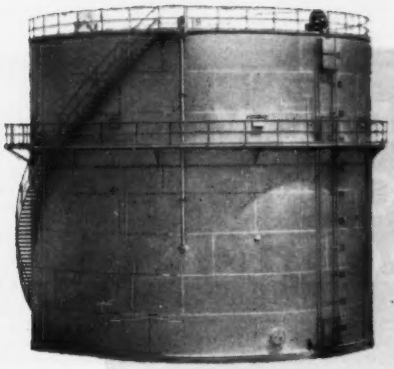
**Kine Combo:** A new veterinary drug now sold by Chas. Pfizer (Brooklyn) is Combiotic P-S Ointment, for treatment of mastitis in milk cows. A combination of 100,000 units of penicillin and 100 milligrams dihydrostreptomycin, the drug is sold in ¼ oz. tubes only through veterinary physicians.

•

**Corrosion Control:** Texas Acidizers, Inc., is offering corrosion control chemicals for oil-well drilling equipment. The solution of inhibitors is custom formulated for each well.

•

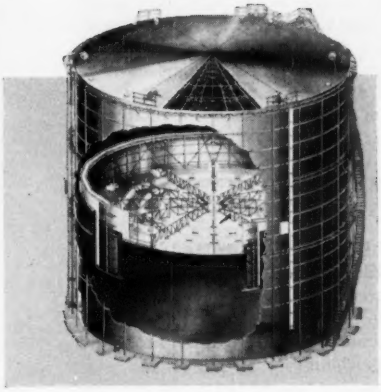
**For Molding:** A new polystyrene with medium impact-resistance properties is being marketed by Koppers Co.'s (Pittsburg) Chemical Division. Called Koppers MC 401, it is available in all standard opaque colors.

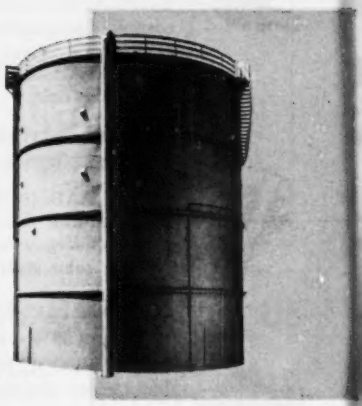


SIMPLICITY

EFFICIENCY

ECONOMY





# *Wiggins Gasholder* | by GENERAL AMERICAN

. . . that's what you get when you specify WIGGINS GASHOLDERS for chemical process and industrial gases.

The absolutely dry, frictionless seal of the WIGGINS GASHOLDER is gas-tight and impermeable. Can't freeze or "hang up" —there's *no* water—*no* tar—*no* grease. *No* complicated mechanism. *No* gadgets. *No* operating costs. *No* maintenance costs.

Ask us about installations made from coast to coast for economy-minded process engineers—men who *know* that the Simplicity of the WIGGINS GASHOLDER in operation *always* results in Efficiency and Economy.

**Send for Bulletin WG-22! It's written for you!**

WIGGINS VAPOR SEALS
GENERAL AMERICAN
TRADE MARK

**GENERAL AMERICAN TRANSPORTATION CORPORATION**
**135 South La Salle Street, Chicago 90, Illinois**
*Offices in all principal cities*

# DREW TECHNICAL PRODUCTS

Drew produces more than 20 Fatty Acids in volume to meet the specific demands of manufacturers in many fields. Years of close study of Fatty Acids, plus modern research, production techniques, and equipment give you a product plus in Drew Fatty Acids.

### LAURIC ACID FOR SHAMPOOS, SOAPS, SHAVING CREAMS, COSMETICS

DREW LAURIC ACID, distilled, fractionated and stabilized to safeguard color on prolonged heating. Formula ABL (70% Lauric Acid) is widely used in high grade cosmetic preparations, soaps, shampoos and shaving creams. Titre 30°C Minimum. Formulas AB, ABH and A are also popular in this field.

### LAURIC ACID FOR WETTING AGENTS, DETERGENTS, INSECTICIDES

DREW AAB (85%-90% Lauric Acid). Distilled and fractionated to provide greater efficiency, better composition and superior color stability characteristics.

### LAURIC ACID FOR ALKYD RESINS, FLOOR WAXES, PAINTS

DREW WECOLINE ABL. Distilled and fractionated coconut fatty acid with high lauric acid content. Shorter average molecular chain length and practically no degree of unsaturation. An ideal ingredient for alkyd resins due to its plasticizing efficiency and non-yellowing characteristics. Especially useful in formulations containing urea or melamine resins. A complete range of coconut fatty acid formulas: AB, ABH and A, are also available for use in the production of alkyd resins.

### STEARIC ACID FOR METALLIC SOAPS and NON-IONIC EMULSIFIERS

DREW FORMULA 300—hydrogenated, distilled Stearic Acid (approximately 65%). High titre, low iodine value. Excellent color and mild odor. Permits manufacturers to obtain good, light color in finished products at nominal cost. Other grades of Stearic Acids also available up to 90%.

### PLASTICIZER FOR PROTECTIVE COATINGS, ADHESIVES, IMPREGNANTS, INKS

DREW DP 520. More than a plasticizer: a versatile chemical used to impart flexibility, clearness, toughness, permanence in a wide variety of protein base products. Exceptionally stable against heat and humidity changes.

---

**Drew Fatty Acids are, in many cases, both distilled and fractionated by a continuous process to reduce unsaponifiables, to keep color and odor forming bodies to a minimum, and when necessary to concentrate the unsaturated acids. When you specify Drew Fatty Acids, you pay only for the fractions that are best for your product.**

***If you demand quality in your product, always insist on Drew Fatty Acids. Write for complete reference book, "Drew Fatty Acids", or phone us.***

*TECHNICAL PRODUCTS DIVISION*

**E. F. DREW & CO., INC.**

**15 EAST 26th STREET, NEW YORK 10, N. Y.**

**CHICAGO PHILADELPHIA BOSTON**

**DREW PRODUCTS**

# BOOKS.....

**The Chemistry of Organic Compounds,** fourth edition, by James B. Conant and Albert H. Blatt. The Macmillan Co., New York, N. Y.; viii+655 pp., $5.90.

An elementary course in organic chemistry, this volume covers essential facts of the subject, along with "empirical generalizations." This edition contains new material on the mechanisms of organic reactions and on the directions which reactions follow.

**Manures and Fertilizers,** a Survey by the British Ministry of Agriculture and Fisheries. Chemical Publishing Co., Inc., New York, N.Y.; iv+96 pp., $2.50.

Book discussing the nature and use of natural organic manures and synthetic inorganic fertilizers. The final section deals with the subjects of fertilizer evaluation, soil analysis and trace elements.

# MEETINGS...

**Flavoring Extract Mfrs.' Assn.,** annual meeting, Edgewater Beach Hotel, Chicago, May 25-28.

**Natl. Assn. of Purchasing Agents,** annual convention, Convention Hall, Atlantic City, May 26-28.

**Amer. Leather Chemists Assn.,** annual convention, New Ocean House, Swampscott, Mass., June 1-4.

**Chem. Inst. of Canada,** annual conf. & exhibition, Mount Royal Hotel, Montreal, June 2-4.

**Assn. of Consulting Chemists & Chem. Engrs.,** annual spring outing, Westchester Country Club, Rye, N.Y., June 6.

**Chem. Specialties Mfrs. Assn.,** mid-year meeting, Sheraton-Plaza Hotel, Boston, June 9-10.

**Natl. Fire Protection Assn.,** annual meeting, Statler Hotel, N.Y., June 9-13.

**Div. of Medicinal Chem.,** national chemistry symposium, Univ. of Virginia, Charlottesville, June 12-14.

**Natl. Fertilizer Assn.,** annual meeting, Greenbrier Hotel, White Sulphur Springs, W. Va., June 16-18.

**Div. of Analytical Chem.,** annual summer symposium, Michigan State College, East Lansing, June 20-21.

**Forest Products Res. Soc.,** annual meeting, Schroeder Hotel, Milwaukee, Wis., June 23-25.

**Mfrg. Chemists Assn.,** joint meeting with SOCMA, Greenbrier Hotel, White Sulphur Springs. W. Va., June 23-25.

**Synth. Org. Chem. Mfrs. Assn. of the U.S.,** annual meeting, Greenbrier Hotel, White Sulphur Springs, W Va., June 23-25.

**Amer. Soc. for Testing Materials,** annual meeting, Statler & New Yorker Hotels, June 23-27.


*Are your* **CHEMICAL INTERESTS** *Closely Held or Family Owned?*

This bank specializes in chemical financing, particularly in connection with closely held or family owned companies.

We believe in the soundness of the American chemical industry and its prospects for growth and will look sympathetically upon companies or individuals who have financial problems in this field.

*Chemical Department*

**Empire Trust Company**

**120 BROADWAY, NEW YORK, N.Y.**

MEMBER FEDERAL DEPOSIT INSURANCE CORPORATION

**ACTIVE IN THE BUSINESS OPERATIONS OF THE CHEMICAL PROCESS INDUSTRIES?**

**. . . then Chemical Week is your magazine. It's the quickest way of keeping on top of all the business news about your interests. It will help you function more efficiently as a key man in this vital industry.**

**READ CHEMICAL WEEK every week!**

**Use This Form to Enter Your Subscription**

**NEW SUBSCRIPTION ORDER FORM**

CHEMICAL WEEK
330 West 42nd Street, New York 36, N. Y.

Enter my subscription to Chemical Week for 1 year (52 issues) @ $5*

☐ 3 YEARS FOR $10* or ☐ 2 YEARS FOR $8*

☐ I will pay when you bill me. ☐ I enclose remittance

NAME ..... Your position .....

Home Address .....

City ..... Postal Zone ..... State .....

Company ..... Products .....

*ABOVE RATES ARE FOR U. S. AND U. S. POSSESSIONS ONLY

CANADA: $6 ( ) 1 year .. $10 ( ) 2 years .. $12 ( ) 3 years (payable Canadian or U. S. funds)
LATIN AMERICA: $15 ( ) 1 year $25 ( ) 2 years $30 ( ) 3 years
OTHER COUNTRIES: $25 ( ) 1 year $40 ( ) 2 years $50 ( ) 3 years

5-24-52

# PROTECTION

## *built in*

Tough as a Rhino's hide! **Fulton's W.P.P.L.** (Waterproof Paper Lined) **Bag** is a reinforced textile bag that is doing the job of more expensive containers. It is designed especially for products that require protection inside and out. Tough paper or plastic linings are laminated with special adhesives to either cotton or burlap to give your product *extra* protection from moisture absorption, evaporation, or contamination from other outside influences. Maybe this is the package you've been looking for—write for full particulars.

*Fulton* **BAG & COTTON MILLS**

**Atlanta • St. Louis • Dallas • Denver • Kansas City, Kans. • New Orleans • Los Angeles • Minneapolis • New York City**

# Some Things Are WORSE THAN STRIKES

*This editorial which appears in McGraw-Hill publications was written just prior to the resignation of Charles E. Wilson as Director of Mobilization. The principle it discusses is of basic and continuing importance in our struggle to maintain economic and personal freedom in America.*

**It is to be hoped that the managements of the steel industry will resolutely resist the efforts of the national Wage Stabilization Board to force them to establish the union shop in their plants. In essence, the union shop means compulsory union membership.**

They should resist not because of any financial advantage to the owners of the industry. There would be none. They should resist out of a decent regard for those ideals of our country which we are now fighting in Korea to protect. Moreover, their resistance would, as a matter of fact, benefit the leaders of the organized steel workers by protecting them from the certain and bitter fruits of their "victory" in getting the government to impose the union shop on the steel industry. Their successful resistance would also prevent Premier Stalin and his co-workers from enjoying a hearty laugh at our expense.

### Fun for the Russians

This is why the Politburo would find the establishment of the union shop in the steel industry, at the behest of the Wage Stabilization Board, so profoundly amusing. We are fighting in Korea because we believe that armed aggression, promoted by Russia, menaces our freedom. And we are spending hundreds of billions of dollars here at home for armament to protect our freedom at other danger points. When this rearmament program is threatened by a crippling strike, the federal government through its Wage Stabilization Board proposes to buy off the threat by plowing under a vital element of that freedom which we are trying so desperately to preserve.

When the union shop is adopted through voluntary agreement, as it has been in cases covering millions of workers, it deeply undercuts the freedom of the individual. To hold his job he is required to join the union and support it financially whether he wants to or not. In the case of such voluntary agreement, however, the government takes no direct part in thus destroying the freedom of its citizens. It is essentially a private transaction.

### Tyranny is the Word

But in the steel case the federal government becomes a party to a direct attempt to impose the union shop. Instead of protecting its citizens in their right to earn a livelihood, the government forces certain of them to join and support a private organization which they have clearly indicated they do not want to join. This they must do to hold their jobs. Tyranny is the accepted designation of government coercion of this kind.

It may be objected that the Wage Stabilization Board merely recommends the union shop, does not order it. This was also true of the action recently taken by a President's Emergency Board, which also "recommended" that working agreements between the

railroads and about a million non-operating railroad employees include a provision for the union shop. A government recommendation, however, can easily be given much of the force of an order, particularly by the calling of a strike to "uphold the hand of the government."

It seems entirely clear that in trying to impose the union shop on the steel industry the Wage Stabilization Board has completely lost its bearings. It was set up to handle labor problems to tide over an emergency. Now it comes up with a revolutionary modification of labor relations in the steel industry which, if adopted, would become a permanent part of the institutional machinery of the industry.

**"Too Much Like Hitler"**

Early in World War II an effort was made to have the federal government order the union shop for a group of organized coal miners. President Franklin D. Roosevelt, who will go down in history as one of organized labor's greatest champions, blocked it. "That," he said, "would be too much like the Hitler methods toward labor." But now, with supreme irony, the federal government fosters this Hitlerlike method toward labor ostensibly to advance our conflict with Stalin.

In persuading the Wage Stabilization Board to sponsor the union shop for steel workers, there is every reason to believe that the union leaders have trapped themselves. If the government imposes the union shop, a next step clearly becomes necessary. This is government regulation of the union in order to provide a modicum of protection for the minority that would be forced by the government to join against their will. It could be that for a time the government would ignore this obligation. But, having granted the union the power to eliminate the minority, it would sooner or later be forced to regulate the use of that power. Thus free collective bargaining and freedom itself would be the losers.

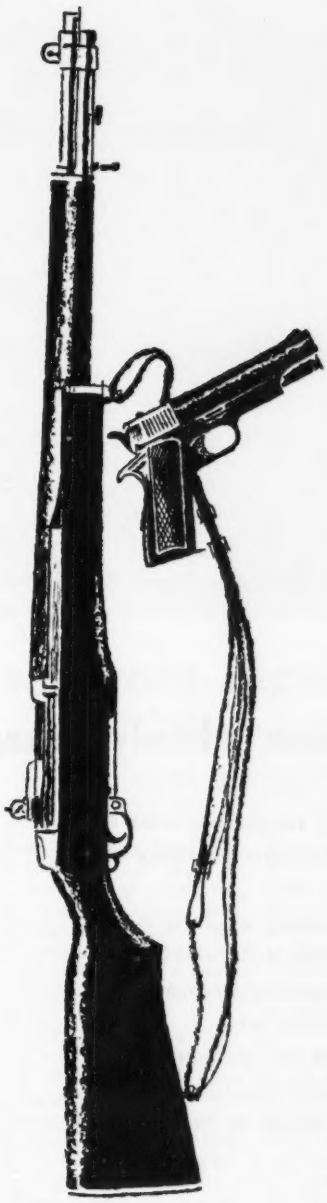
**An Issue of Basic Principle**

Resistance to a government-sponsored union shop for the steel industry is bound to bring harsh denunciation both from the administration and union leaders who have teamed to back it. Not only does the union shop relieve the union leaders of the problem of recruiting members, it also eliminates a group of workers that they stigmatize as "free riders"—namely, those who work for companies which have a working agreement with a union but do not join the union. In the basic steel industry about 10 per cent of those who work for companies with union agreements are not members of the union. Such a small percentage of non-members is obviously no threat to the "security" of the union, although that is what the drive for the union shop ostensibly is designed to protect.

In the reporting of the present labor dispute in the steel industry virtually all of the attention has been focussed on the handling of the issue of a wage increase and how large it should be. This, to be sure, is vitally important. Mobilization Director Wilson has said it is "a serious threat to our year-old effort to stabilize the economy." But certainly of comparable importance is the tremendous issue of principle raised by the government's backing of the union shop for the steel industry.

**If the position of the Wage Stabilization Board on the union shop prevails, our government will have blunted the arms we are forging to fight for our freedom abroad by undermining a major bulwark of our freedom right here at home. At this critical time in the struggle to preserve and protect our freedom such a subversive course should be resisted to the limit.**

***McGraw-Hill Publishing Company, Inc.***



# OR BUTTER

As the nation develops two programs at the same time, emphasis necessarily swings between emergency defense and civil growth.

But whether the demand is for more aluminum for planes or more paper for books—to the chemical industry, it means demand for soda ash.

Chlorine for munitions or chlorine for bleaching—the demand is still for chlorine.

This is the nature of the chemical industry: it is basic to all industries and grows with each.

* * *

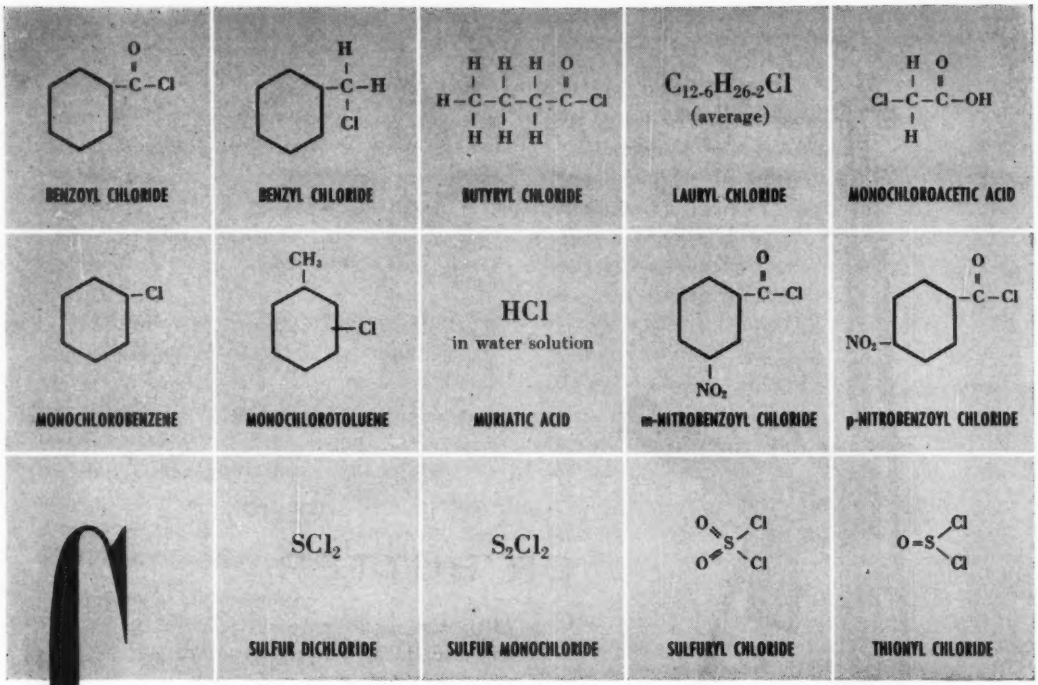
This advertisement is one of a series currently appearing in the *Wall Street Journal*, *New York Journal of Commerce*, and *Fortune* magazine, to acquaint financial leaders and executives with the role the chemical industry plays in our American economic system.

DIAMOND ALKALI COMPANY

CLEVELAND · OHIO

*Chemicals you live by*

DIAMOND ALKALI CHEMICALS




# CHLORINE ATOMS come in handy packages!

Hooker supplies many different chlorinated compounds used as intermediates in the manufacture of other chemicals, pharmaceuticals, cosmetics and dyestuffs.

Most of the compounds listed here are readily available now; some in limited quantities. Others will be available in the near future.

You'll like the way Hooker helps you meet production deadlines. Shipments are scheduled to tie in closely with your needs.

For full information on Hooker chlorinated intermediates, write today, on your business letterhead, for Bulletin No. 100, General Products List. Ask also for Technical Data Sheets on the specific Hooker Chemicals you will need.

*From the Salt of the Earth*

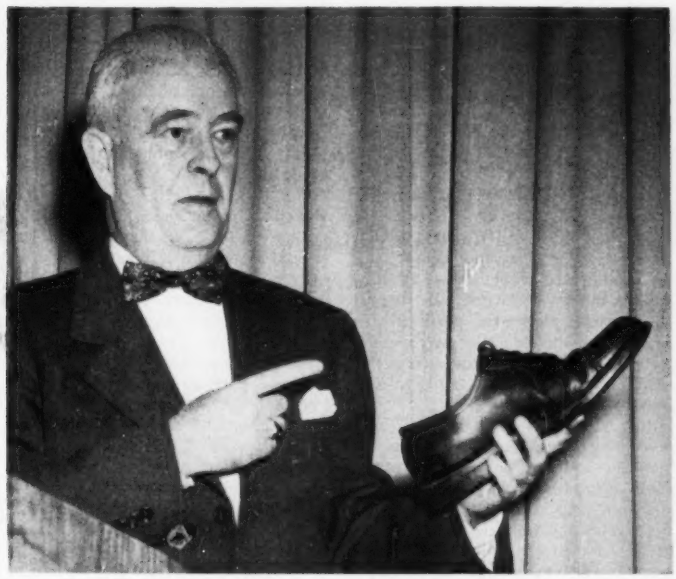
HOOKER ELECTROCHEMICAL COMPANY

3 FORTY-SEVENTH ST., NIAGARA FALLS, N. Y.
NEW YORK, N. Y. • WILMINGTON, CALIF. • TACOMA, WASH.

HOOKER CHEMICALS®

1-1720

SODIUM SULFIDE • SODIUM SULFHYDRATE • SODIUM BENZOATE • CAUSTIC SODA • BENZOIC ACID • ALUMINUM CHLORIDE • SULFUR CHLORIDE



EMERY SALESMAN*: Manhattan tells Wichita, and vice versa.

# Sales Cross-Fertilization

To gain maximum yield from salesmen's ingenuity, Mid-West manufacturer accents unique sales-meeting technique.

Emery Industries is convinced that the best man to talk about a new idea is the man who thought it up.

**Emery salesmen,** packing their bags last month for the annual jaunt to Cincinnati, crammed in among the shirts and shaving kits some most unlikely travelling gear. Their suitcases bulged with such items as pieces of garden hose, bottles of fluorspar ore, and samples of foam-rubber ladies' beguilers.

The men were not cracking under the strain of a growing buyer's market, however. Rather, they had been forewarned and consequently were coming forearmed to take part in Emery Industries' latest strategy huddle on how to cope with the tough-selling days ahead.

It was sales manager Bob Brown's idea that many of his territory men had developed selling techniques and product applications which would be useful in other geographical areas. But the freshness of these innovations tended to be dulled when translated into directives from headquarters or included in sales-meeting lectures.

**Man to Man:** The obvious solution, according to Bob's analysis, was to let the individual men talk about themselves and the way they had overcome the problems in their own areas. The subject matter would then be limited to successful, proven ideas, and the infectious enthusiasm with which they were presented would help to guarantee their acceptance by the other salesmen.

With this plan in mind, a day and a half of the week-long meeting was set aside and specific periods allocated to each of the incoming travellers. They were told of their imminent participation and requested to prepare a talk, with samples for display, built around these subjects:

- A successful sales experience using an out-of-the-ordinary approach.
- An application problem satisfactorily solved, preferably with a unique use of the company's products.
- At least one unsolved sales problem (to encourage group discussion).

Salesmen being by nature a gregarious group, this was all they needed as an excuse to sound off about their accomplishments. The listeners, most of whom had their own turn at bat, found it easy to stay attentive since each speaker's comments paralleled experiences which they were meeting themselves every day.

Cincinnati management officials benefited too by the outspoken remarks since it gave them an intimate view of the problems of the road which would be difficult to obtain in any other way.

**Customers' Gain:** But it is Bob Brown's conviction that in the long run it will be the company's customers who benefit most from his sales-meeting idea. Like most chemical sales managers, he finds that his products go into a bewildering array of industries and uses. Emery's expanding line of fatty acids and derivatives cuts across all fields of manufacturing activities, and it is difficult, if not impossible, for one man to keep himself abreast of developments in the various consumer industries.

Since Emery's sales force is distributed mainly on a geographical basis, each man is called upon to know at least something about a wide variety of manufacturing processes. Inevitably, however, they tend to become specialists in certain fields. The New England man, for instance, would know more than his share about the textile industry, and the Akron salesman would be an expert on the use of hydrogenated fatty acids in rubber products.

But this specialized knowledge was of no value to Emery customers in other areas. In short, Bob Brown felt that the sum of his firm's sales-service potential was less than that of its component parts. The close contact between his salesmen during their sales meeting talks, he thought, would go a long way toward correcting this weakness.

Consequently, the more diverse the subjects, the more worthwhile he would consider the venture. His men did not let him down. Taking their turns at the lectern, they rapidly dealt with such "unrelated" activities as concentrating fluorspar with the latest flotation tricks and formulating hair tints out of oleic acid. The polishing of silver bowls with hydrogenated-fatty-acid buffing compounds led naturally to a discussion on the shining of shoes with a stearic-based shoe polish.

The only limiting factor was the need to protect certain customers' processing secrets. Even with this limitation, hardly a present or potential use of Emery's products was neglected. By the time the visiting salesman had repacked their bags and checked

* Harry Armitage, New York district manager.

out of the Netherlands Plaza Hotel, fagged-out Bob Brown could be confident that his men were heading back for the firing-line with an abundance of fresh ammunition.

## Ad-Mad Chemicals?

**Surprised,** to say the least, was the reaction of the average chemical company advertising manager when he read in a recent issue of Advertising Age that his industry spent more money, in proportion to sales, than any other manufacturing group in the country.

Moreover, it was more than a moderate leadership. According to the figures derived from Bureau of Internal Revenue statistics covering the period 1945-1948, the average for all manufacturing corporations was only 0.95% of total sales, while the Chemicals and Allied Products group spent almost three times as much on advertising, or nearly 2.8¢ out of each sales dollar.

On second glance, however, the survey made more sense. Included in BIR's "Chemical" classification are the giant soap, detergent, and drug firms which sell almost exclusively on the retail level. Their heavy sponsorship of nation-wide sales campaigns, using everything from highway billboards to TV soap operas, brought the group rating up to the top of the heap.

**Runners Up:** Trailing behind chemicals came the beverage industry with a performance of 2.4%, and in a surprising third spot was the heavily-promoted tobacco business which managed to smoke out its necessary quota of customers by burning up only 2.3¢ in advertising to pull in a dollar of sales.

Near the other end of the list stood the Petroleum and Coal Products classification, usually considered as a member of the chemical process industries family in such statistical evaluations. Its average for the four years was in the neighborhood of 0.5% and can probably be used as an approximation for the raw-material, heavy-chemical average advertising expenditure.

•

**Westward Ho!** Los Angeles, California, is the site for a new office, warehouse, and laboratory to be established by the O. Hommel Co. (Pittsburgh, Pa.). The complete stock will include ceramic colors, chemicals, and frits.

•

**More for L.A.:** The Goss Coated Fabrics Corp. (Los Angeles) has been appointed as West Coast distributor of Monsanto's Ultron vinyl film. The move is said to reflect increased monomer and film supplies.

•

**Yankee Trader:** New England sales of Advance Solvents & Chemical's products going into the plastics, rubber and adhesive fields will be handled out of Boston, Mass., by the Barrett & Breen Co.

•

**Overseas Teletype:** The Inter-Gulf Chemical & Supply Co. (New York) is offering the use of its new R.C.A. "Tex" teletype machine as a means of establishing direct two-way teletype contact with overseas customers or suppliers. Interested parties, especially those outside the metropolitan area, will be charged on a commission basis for business actually consummated.

•

**Terminal Expansion:** In a burst of expansion activities, five major petroleum companies are enlarging their distribution and storage facilities at Spartanburg, South Carolina. A total of over $1 million will be spent by Sinclair, Gulf, American, Texas, and Atlantic Refining.

•

**Northwest Oil:** Another terminal expansion, this one at Linnton, Oregon, nears completion. General Petroleum Corporation has spent $825,000 to build two new storage tanks and a cargo dock.

•

**Buyers' Guide:** Plans for the 1952 edition of the CW Buyers' Guide to be published this fall include several changes from the present format. The company directory section will be arranged alphabetically instead of geographically, allowing the consolidation of an individual company's home, district, and sub-offices, including addresses and telephone numbers. The chemicals directory section has been expanded to include information on grades and types of packaging, and the equipment directory will have a new product listing section devoted to used equipment.

# Small-Package Retail Rides Again

**Hercules Powder Co. is the latest large producer of basic chemicals to extend a helping hand to the retailer of small, home consumed, quantities. The product is turpentine, on which a test run of a retail aid campaign has just been completed in Philadelphia. Result: Sales of the company's turpentine are definitely up in the area; more and larger tests planned.**

With an abundance of turpentine on hand, and the advent of a buyer's market, the company decided that the time had come to go after the small sales market in earnest. Philadelphia was selected as the test area, where jobbers Loos & Dilworth and Suppiee-Biddle-Stetlz Co. have 6,000 outlets on their retail lists.

Hercules sales department people met first with the sales force of these distributors to iron out plans, inform the distributors of details, prior to launching the campaign.

**Literature Legion:** Direct mail, throwaways, window displays, counter cards, all extolling the value of turpentine, and most directly, of Hercules turpentine, were supplied to the distributors and their retail outlets. Typical of the general nature of the literature is one piece driving home the claim that wood turpentine, made by Hercules, is really the same as gum turpentine, not made by Hercules. This counteracts the die-hard feeling that gum turpentine is in some way superior to the wood variety.

While saturating the market area with this literature, Hercules also hired time on local TV stations for spot commercials for its turpentine. As yet the company has not attempted to assess the various means of advertising used, but the consensus is that the TV spots were most profitable.

Not neglecting the older methods, the company managed to get feature stories in Philadelphia papers, complete with pictures showing the right and wrong way to pour turpentine from the can. Of course the can was quite plainly a Hercules can.

**Helping Hand:** All of this effort and money on the part of Hercules is another indication of the growing trend for big chemical manufacturers to undertake extensive campaigns designed to aid the retailer in selling their products (*CW, March 29*). The object, of course, is to convince the retailer that he will do best if he sells their brand of calcium chloride, turpentine, or whatever it may be.

After many years of suffering the role of poor relations, retailers are naturally delighted with all this aid from their rich suppliers. For the big companies like Hercules, with industrial users and raw material needs satisfied, the retail shop is returning to its position as an important outlet. If all the time and capital it spends on ads really helps toward the goal of "Sell a can of turpentine with every can of paint," Hercules will be repaid, and so will the retailer who handles its product.

A typical Air Products high purity Oxygen-Nitrogen Generator installation in one of America's larger steel plants.

## High or low purity—small or large quantities made at your plant from air

**Used Today By Such Companies As:**

American Chain & Cable Co., Inc.
Bethlehem Steel Co.
Copperweld Steel Co.
Thomas A. Edison, Inc.
Ford Motor Company
Granite City Steel Co.
Grede Foundries, Inc.
St. Francis Hospital
Libbey-Owens-Ford Glass Co.
National Steel Corp. (Weirton Steel Company)
Pettibone Mulliken Corp.
Pittsburgh Steel Foundry Corp.
Ross-Meehan Foundries
and U. S. Armed Services

**Many of these installations have been operating constantly for years.**

**What are your requirements?** *Pure, dry* oxygen or nitrogen, gas or liquid? *Tonnage* oxygen or nitrogen, gas or liquid? Some *combination* of these?

Whatever your needs, versatile Air Products Generators can fulfill them. Today, many installations are in operation with oxygen capacities from 200 cubic feet to 500,000 cubic feet per hour. Additional tonnage oxygen-nitrogen generators are now under construction. Equipment for virtually *any* capacity, *any* purity, and *any* pressure is available.

**To find out how** you can use the free air to make your own oxygen and nitrogen, talk over your requirements with Air Products Engineers. They have designed, built and put into successful operation *more than 400* oxygen-nitrogen generators. This is your assurance that Air Products equipment will (1) incorporate the most advanced cycles for your particular requirements, and (2) will do the job, and do it dependably.

**AIR PRODUCTS, INCORPORATED**
Dept. J, Box 538, Allentown, Pa. Emmaus 493

**Specialists in Equipment for All Low-Temperature Processes**

Air Products INCORPORATED
OXYGEN-NITROGEN-ARGON GENERATORS

# *"VARIETY is the spice of life"*— and it's variety that makes Powell Valves the answer to all your flow control problems

**Fig. 1847**—Small 200-pound Swing Check Valve with screwed-in cap and regrindable, renewable disc. Available in a wide variety of corrosion-resisting metals and alloys.

Because they are made in such a wide variety of designs and materials, Powell Valves are the answer to the many flow control problems encountered in the Chemicals and Process Industries.

Whether it's to replace an unsatisfactory valve or for a new installation, Powell can supply a valve that's precisely adapted to the conditions under which it must operate.

**The Wm. Powell Company, Cincinnati 22, Ohio**

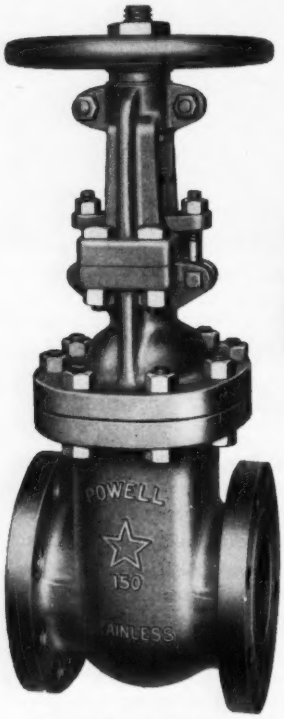



**Fig. 1503 S. S.**—Class 150-pound Stainless Steel Gate Valve with flanged ends, outside screw rising stem, bolted flanged yoke and tapered solid wedge.

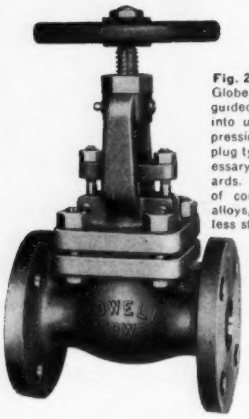


**Fig. 2475**—150-pound O. S. & Y. Globe Valve. Stem is threaded and guided through a bushing screwed into upper yoke which has a compression lubricant fitting. Seat and plug type disc easily reground if necessary. Conforms to latest standards. Available in a large selection of corrosion-resisting metals and alloys, with bolts and nuts in stainless steel. Also with screwed ends.

DEPENDABLE VALVES SINCE 1846

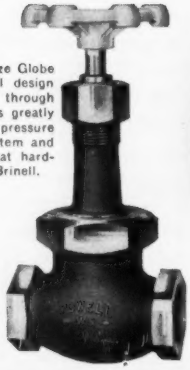


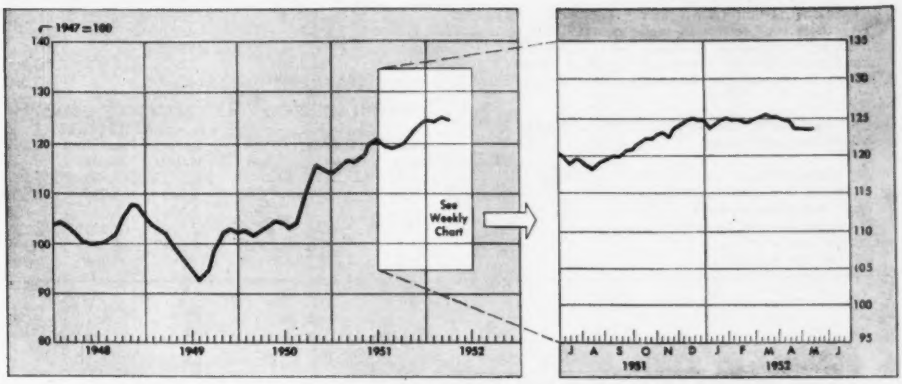
**Fig. 2608**—200-pound Bronze Globe Throttling Valve. A Powell design that permits FULL FLOW through seat when wide open, thus greatly minimizing turbulence and pressure drop. Has special bronze stem and stainless steel disc and seat hardened to approximately 500 Brinell.

**Fig. 1793**—Large 125-pound Iron Body Bronze Mounted Gate Valve. Made in sizes 2" to 30", incl. Has flanged ends, bolted flanged yoke, outside screw rising stem and tapered solid wedge. Also available in All Iron.

# POWELL VALVES

**In Bronze, Iron, Steel and Corrosion-Resisting Metals and Alloys.**

# MARKETS . . . . . .




CW Index of Chemical Output—Basis: Total Man Hours Worked in Selected Chemical Industries

## MARKET LETTER

Washington is still aiming high despite a good deal of industry dog-trotting. DPA last week set up a new expansion goal target for methylene chloride, wants 109 million pounds by Jan., 1955.

And the Defense Production Administration was heaving out any thoughts about decontrolling methylene chloride, at least during the defense period. "Very short supply" is the terse reason.

Recommissioning of planes, ships is increasing military demand for paint strippers. (Paint and varnish remover consumes about 70% of annual methylene chloride output, more is required).

Some, not enough, new capacity for methylene chloride is under construction. Tax amortization certificates for 50.2 million pounds of the 70 million pounds increase are still open; approval has been granted for only 19.8 million thus far.

On the other end of the spectrum is probable decontrol of lead and all lead products. Third slash in three weeks, which sent quotations 4¢ below official Government ceilings, started the Lead Industries Association to whoop-de-dooing for immediate controls-freeing. It cites OPS head Arnall's declaration of decontrol policy *(CW, May 3)*.

Lower price, currently 15¢/lb., may stimulate volume buying by both foreign and domestic consumers. Good prospects for lead outlets are gasoline (which continues to make large demands), and the storage battery industry's predicted 23 million batteries in 1952.

Continued low rate of coal chemicals' production schedules is bound to hit the over-all supply position of the Big Three—benzol, toluol and xylol. Another wallop: The petroleum industry strike, even though it now seems washed up.

If not washed up, then, watered down is export demand for industrial chemicals. Alkalis, especially, continue dull.

More nitrogen is headed for the world market. This week the Italian Ministry of Foreign Trade set export quota of 8 thousand tons of nitrogen (equivalent to 40 thousand tons sulphate of ammonia) to all destinations.

| WEEKLY BUSINESS INDICATORS | Latest Week | Preceding Week | Year Ago |
|---|---|---|---|
| CHEMICAL WEEK Output Index (1947=100) | 124.0 | 123.5 | 120.5 |
| Bituminous coal production (daily average, 1000 tons) | 1,338.0 | 1,429.0 | 1,601.0 |
| Steel ingot production (thousand tons) | 2,104.0 | 2,084.0 | 2,071.0 |
| Stock price index of 14 chemical companies (Standard & Poor's Corp.) | 231.0 | 229.2 | 233.9 |
| Chemical process industries construction awards (Eng. News-Record) | $82,050,000 | $32,406,000 | $1,023,000 |

| MONTHLY BUSINESS INDICATORS—TRADE<br>Millions of Dollars | MANUFACTURERS' SALES | | | MANUFACTURERS' INVENTORIES | | |
|---|---|---|---|---|---|---|
| | Latest Month | Preceding Month | Year Ago | Latest Month | Preceding Month | Year Ago |
| All Manufacturing | $21,964 | $23,332 | $22,605 | $42,513 | $42,193 | $35,557 |
| Chemicals and allied products | 1,524 | 1,598 | 1,628 | 3,028 | 2,996 | 2,520 |
| Paper and allied products | 631 | 672 | 669 | 1,056 | 1,051 | 808 |
| Petroleum and coal products | 1,950 | 2,089 | 1,856 | 2,520 | 2,500 | 2,228 |
| Textile products | 1,081 | 1,151 | 1,308 | 2,564 | 2,670 | 2,808 |
| Leather and products | 195 | 218 | 318 | 547 | 546 | 640 |

At home, a possible break in the clouds for textiles was predicted last week by Textron, Inc.'s shrewd president, Royal Little. He sees rayon easing out of the doldrums. Says he, "For the first time in fifteen months (in April, 1952) shipments of viscose, acetate filament yarns and staple exceeded production—an indication of a brighter immediate future."

Another hopeful sign: Inventories in the hands of rayon manufacturers have begun to drop.

Resuming production of cellulose acetate flake at three Celanese Corp. textile yarn plants is verification of Little's prognostication. The company's Celco (Va.) plant is now in operation; the Cumberland (Md.) works resume this week; the Rock Hill (S.C.) plant, very soon.

More anent DPA's high-flying. Eye-opening reflection of the plastics materials market could be the expansion goal set by DPA: 4.6 billion pounds by Jan., 1955.

This is a 2½ billion pound increase over 1950's 2.1 billion. The goal is set for the overall plastics materials field, not for individual items (CW, April 26).

This week DPA is also revising upward its long-term estimates of requirements for additional chemicals. For sodium chlorate, 145 million pounds by Jan., 1955, a 77 million jump over 1951.

Government-owned capacity will account for 26 million pounds of the increase; private plant process improvement without Washington aid, for another 2 million. The other 49 million pounds has or may receive a Government helping hand.

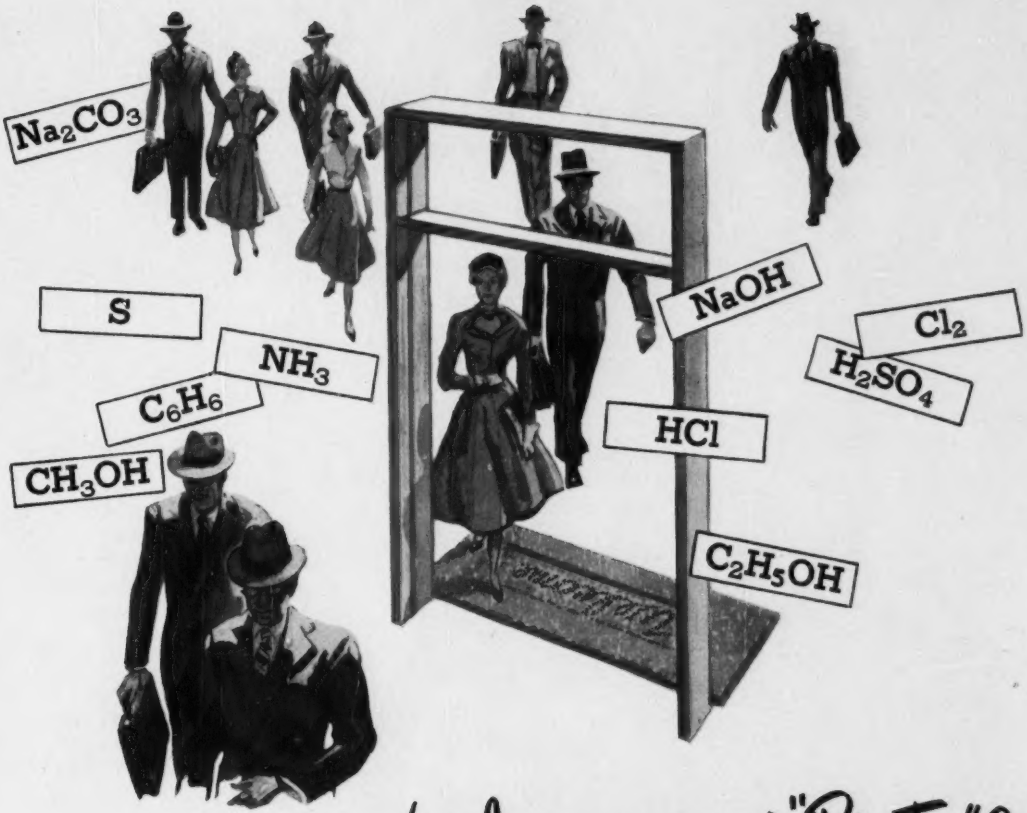
Plans for sebacic acid—calling for a 10 million pounds boost over the 15 million Jan., 1951, capacity— raises the sights to the 25 million pounds-per-year mark by Jan. 1, 1954.

Raw material for natural glycerine will be sufficient for only 201 million pounds of DPA's 278 million pound production goal (by Jan., 1955) for both synthetic and natural; hence, 77 million pounds will have to come from synthetic capacity, 22 million over the present total.

**SELECTED CHEMICAL MARKET PRICE CHANGES—Week Ending May 19, 1952**

| | Change | New Price | | Change | New Price |
|---|---|---|---|---|---|
| **UP** | | | | | |
| Carnauba, No. 1, yel., bags, tons | $ .01 | $1.20 | | | |
| **DOWN** | | | | | |
| Molasses, blackstrap, feed grade, gal., tanks | .01 | .22 | Lead, blue, basic sulfate, bbls., cl., frt. alld. | $ .02 | $ .1575 |

**All prices per pound unless quantity is stated**

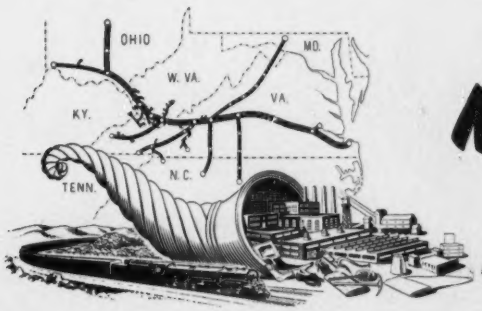



# are You Interested in the "Big Ten"?

If you manufacture or plan to manufacture any of heavy chemistry's "big ten," and are looking for an ideal site for a new or branch plant, it will pay you to investigate *The Land of Plenty**.

You'll be within easy access to many of the minerals you need, including the world's finest supply of all-purpose bituminous coal and plenty of high grade limestone. You'll assure yourself of an adequate supply of industrial water from wells, large and small streams, and tidewater bays and inlets. You'll get a good supply of skilled and semi-skilled manpower — intelligent, adaptable and *home-rooted*. You'll produce better because there are no extremes in weather, moisture or aridity. You'll profit by the N&W's *Precision Transportation* to nearby major industrial markets . . . and, through the modern Port of Norfolk on Hampton Roads, you'll have access to world markets.

For full details about *The Land of Plenty*, write the Industrial and Agricultural Dept., Drawer CW-510, Norfolk and Western Railway, Roanoke, Va. Plant location specialists will help you promptly . . . and in confidence.




**Norfolk and Western RAILWAY**

*THE SIX GREAT STATES SERVED BY THE NORFOLK AND WESTERN
VIRGINIA • WEST VIRGINIA • OHIO
NORTH CAROLINA • MARYLAND • KENTUCKY

from coal mine to finished products

**INLAND'S**
"CHAIN REACTION"
means
QUALITY COAL
CHEMICALS

**BENZOL • TOLUOL • XYLOL**
**AMMONIUM SULPHATE • CREOSOTE OIL**
**COAL TAR SOLUTIONS • PYRIDINE (crude)**
**NAPHTHALENE (crude) • CARBOLATE**
**PHENOLATE • PITCHES**

Inland-owned mines yield the high-quality coal essential to production of fine steels. From this same coal... further improved by washing and grading... Inland extracts the coal chemicals that have become known for their consistent high quality.

You can be sure of uniform coal chemical performance when these chemicals are made by this completely integrated steel company... where quality is carefully guarded from the mines to you.

All Inland coal chemicals easily meet ASTM specifications.

For your chemical shipping requirements, specify Inland Steel Containers . . . made in every practical size and type from three to fifty-eight gallon capacities.

# INLAND COAL CHEMICALS

INLAND

**INLAND STEEL COMPANY**
38 S. Dearborn St. • Chicago 3, Illinois

# New Million Dollar Baby

Reinforced plastics—principally polyester-glass combinations — loom as growing competitors to other structural, engineering materials; now approaching 60 million pounds annual production.

Dual outlets: Broad range of consumer and industrial products, many defense materials.

Ready and waiting is a big potential market for a better inert bulk filler.

**Reinforced plastics** could be the most important new structural materials developed during the last decade. Although not yet expected to put steel, aluminum or wood out of business, there is no question that reinforced plastics are getting more than nodding recognition as a lusty competitor of these and other structural and engineering standbys. Nods:

- The armed services are claiming substantial amounts for more than 125 separate end uses.
- One big military development program alone – reinforced plastics pipe – is expected to consume 10 million pounds of polyester plastics per year.
- The Navy will order use of some plastics regardless of future easy availability of steel, copper or other metals; does not consider them "substitutes."
- In home appliance construction the trend toward reinforced plastics grows stronger.

These materials are the latest burgeon of the immense (estimated 1952, 2.6 billion pounds) synthetic resin production. Fabrication entails embedding reinforcing material in plastic resin, molding to shape, allowing to harden. Polyester types are the resins most commonly used at present. Others include phenolics, epoxys, silicones and melamines. Principal reinforcing agent (13-15 million pounds estimated, 1952) is fibrous glass with tensile strength in excess of 300 thousand p.s.i.; others are cotton rayon, nylon, paper, etc.

The combination of plastics and reinforcement makes a versatile structural material. To plastics' inherent weather-resistance, easy moldability and colorability, the reinforcement adds strength, impact-toughness, dimensional stability.

Incorrigible reinforced plastics boosters are quick to point out a raft of "unique characteristics": Such material maintains its molded shape and size under severe stresses and temperature extremes; resists not only weathering but rot, deteriorating influences of fresh and salt water, chemicals, acids, oils, solvents; has low thermal conductivity; is a good electrical insulator; is transparent to passage of ultra high frequency impulses.

**Problem Solver:** The property of transparency to passage of ultra high frequency waves was the mid-wife at the birth of the entire reinforced plastics industry. Early in World War II engineers encountered a tough problem in adapting radar to fighter and bomber planes, needed an appropriate material for aircraft radomes, the housings to shield delicate electronic gear from the elements.

They discovered the answer in a combination of plastic resins with fibrous glass added for strength. Today reinforced plastic radomes are practically standard equipment on both military and commercial aircraft. Newer military applications on the fire include aircraft wings, ordnance components, landing craft.

**Ice-boxes to Coffins:** Civilian product uses for reinforced plastics are equally as varied as those being discovered by the military. Refrigerator manufacturers are finding the low thermal conductivity almost ideal for gussets and strike plates connecting inner and outer compartments (cuts down heat entry), for corrosion- and rust-resistant drip pans; are currently investigating other possibilities.

One typical reinforced plastics success story: A washing machine manufacturer designed a spiral-bladed agitator to increase churning efficiency 30%, found the cost of producing and assembling the required 22 metal parts prohibitive, turned to reinforced plastics. Now he makes the same design agitator—equally strong, much lighter, corrosion-resistant—with only two plastic parts, for considerably less money.

About 10 million reinforced plastic fishing rods are now in use. These so-called "glass" rods illustrate the extent to which this adaptable material affords engineering and design control; flexibility and rigidity can be varied in exact degrees.

More uses include dent-resistant

SAVE MONEY ON PACKAGING
WITH CONTAINERS of MOLDED PAPER by Keiding

Ideal for granulated substances, powders, soaps, abrasives, even some liquids and semi-liquids, Keiding Molded Paper Containers are amazingly strong, light in weight and low in cost.
You may find many economical uses for these containers. They're sturdy enough for shipping, attractive enough for a sales and display package, these containers are available in a wide variety of sizes and shapes. Standard color is white. Write for prices and samples.
Available in nine sizes, ranging from 1 pint to 5 gals., with covers tight-fitting. (Not recommended for shipping liquids.)
KEIDING PAPER PRODUCTS CO.
3048 North 34th Street, Milwaukee 10, Wis.
Largest Manufacturer of Molded Paper Containers

MAGNESIUM SILICOFLUORIDE
ZINC SILICOFLUORIDE
HENRY SUNDHEIMER COMPANY
103 Park Ave., New York 17
Telephone: MUrray Hill 5-4214
Fluorine Specialists for Over 40 Years

tanks for chemicals and acids, protective safety helmets for industrial workers, electrical insulation laminates, precision-molded housings and other parts for motors and machinery, skiis, fishing tackle boxes, chairs, even coffins.

But manufacturers say they are just getting their feet wet in the new field. Big question is: where will the uses stop? The answer will ultimately come out of a mixture of economics and properties. Where reinforced plastics can do a better job at equal cost, or as good a job at lower cost than something else, it may well prevail as the standard, accepted material. Building and home construction could be a hefty market.

There's a clue to this new baby's bright future in another, more familiar material—concrete. A lot less concrete would be used were it not for the steel reinforcement which has made possible design, construction of massive skycrapers, motor highways, airport runways. Conceivably, the addition of reinforcement may expand the uses for plastics on a comparably tremendous scale.

**Wide Open Market:** Employment of additional fillers in reinforced plastic's resins may waken a barely stirring market for inert bulk materials. Vice president Games Slater, Owens-Corning Fiberglas Corp.'s research head, recently pointed out the way to take more advantage of the high strength-to-weight ratio of reinforced plastics over metals. Said he: "Extend each ton of synthetic resin with more and more fillers."

Loading the resin with more filler (20% is average) could mean a sizable market for enough filler to produce the 50-60 million pounds of reinforced plastics production that industry-wise people predict will be reached by year's end. Added inducement: Fillers can stretch resin, save 10¢ per pound of resin used.

Fillers are no toss-up choice and although good ones are in use, the industry is still interested in trying new ones—particularly around 1.5 sp. g. (present ones are about 2.5). A good filler must be white or light-colored, low in iron, absorb a minimum of oil, should be about 1-3 micron size.

Most mined materials (silica, asbestos, mica, limestone, etc.) are too abrasive to do a good job. The flow of abrasives over glass fibers during molding or flexing can seriously weaken a piece. Hence, non-abrasive, uniform-size, chemically precipitated calcium carbonate seems to be out front at the moment.

Cost isn't the only advantage to be had with calcium carbonate filler, however. It gives a smoother, more paintable surface. Glass fibers cool slowly, tend to pull away (especially at the surface) from faster cooling resins. Fillers bring cooling rates more in line, hide fibers, eliminate cracks in resin-rich areas. Wet strength is also improved and polymerization shrinkage reduced—two drawbacks of polyester resins. Fillers also control viscosity, can increase it up to ten times while still maintaining flowability. This reduces waste by leakage from molds.

Although inert, these extenders only slightly decrease tensile, flexural, impact and compressive strength. While some fillers activate resins to cause gelation (even without a catalyst), this is usually not too fast for normal use.

Precipitated calcium carbonate is produced in a number of filler grades. Particle sizes range from 0.03-5 microns, may be coated or uncoated with fatty acids or resins for good flowing and wetting properties.

One thing is sure: Calcium carbonate has the nod at the moment but the booming million dollar reinforced plastics industry is still seeking an inert bulk filler with lower specific gravity. The same size market awaits the manufacturer who can meet the desired specs.

## Government Needs

| Bid Closing | Invitation No. | Quantity | Item |
|---|---|---|---|
| Commanding Officer, New York Chemical Procurement District, 180 Varick Street, New York 14, N.Y. | | | |
| June 4 | CML-30-070-52-86B | 20004 gal | Carbon tetrachloride, tech. grade federal spec O-C-141 |
| Purchasing Officer, Bureau of Engraving and Printing, 14 & C Streets, SW Washington 25, D.C. | | | |
| May 28 | BEP255 | 24000 pds | Ground gelatin glue for use in surface sizing of U.S. Securities to be packed in 200 pound bags |
| Raritan Arsenal, Metuchen, New Jersey | | | |
| May 28 | B52-329 | 22000 gal | Alcohol denatured grade 111 SD-2B spec O-A-396 66 gal drum |
| | | | Alcohol denatured grade 111 SD-2B spec O-A-396 1 gal |
| | B52-333 | 40032 qt | Polish automobile liquid spec PP 546 one quart |


# tracers...

**to opportunities in the Chemical Process Industries**

REPLIES (Box No.): Address to office nearest you.
NEW YORK: 330 W. 42nd St. (36)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

## MANAGEMENT SERVICES

**Evans**

Chemical Research—Processes—Products
Development Problems
Complete Laboratory—Pilot Plant
Mechanical & Optical Sections
Ask for new Scope Sheet C
listing over 100 of our activities

**EVANS RESEARCH & DEVELOPMENT CORP.**
**250 East 43rd St., N. Y. 17, N. Y.**

**THE JAMES F. MUMPER CO.**

Engineers

Plant design, buildings and services. Details & specifications. Process & equipment development. Modernization, Improvements. Surveys & reports.

**313-14-15 Everett Bldg. Akron 8, Ohio.**
**Phone, Je. 5939 — Je. 4543**

**JAMES P. O'DONNELL**

*Engineers*

CHEMICAL PROCESS PLANTS

Design—Procurement—Construction Supervision

**39 Broadway, New York 6**

## EMPLOYMENT

*Position Vacant*

**PAINT CHEMIST**

Organic chemist with some paint and lacquer experience in the finishing of fabricated metal products. To assume complete charge of all experimental work and establish production procedures for all finishes on metal stampings.

Permanent position in an established nationally known company. Salary open. All replies treated in confidence. Phone or write for appointment.

**CRONAME, INC.**
**1749 W. Grace St., Chicago, Ill. Bl. 8-4277**

*Selling Opportunity Offered*

***Sales Manager-Industrial Waxes. Large corpora***tion requires services of sales executive having broad experience in sales of wax to industrial consumers. Applicant should have previous sales management back ground in this field and be capable of establishing sales organization. This offers excellent opportunity with old established company. Eastern location. Reply completely, giving education, business background, salary desired, etc. P-4119, Chemical Week.

*Position Wanted*

**Position Wanted**
**BY PETROLEUM ENGINEER**

Age—39 years. Graduate University of Lemburg, Poland, Europe, in 1936. Majored in organic chemistry. Was actively employed in petroleum industries in Europe from 1937 to 1944. Speaks basic English. Not afraid of hard work. Will settle anywhere.

**Julian Liebesman c/o Associated**
**Placement and Guidance Bureau, Inc.**
**639 N. Eutaw St., Baltimore 1, Md.**

*Selling Opportunity Wanted*

***Wanted—Equipment Account by engineering rep***resentative with extremely active contacts in Chemical, Pharmaceutical and Oil Industries. Interested in equipment which requires engineering know-how, in N.Y., N.J., and Conn. RA-4298, Chemical Week.

## EQUIPMENT--used-surplus

### For Sale

***Amines Unit, Complete, Mfg'd by Braun. Heat &*** Power Co., Inc., 70 Pine St., N.Y. 5.

***Calenders, New Rubber Calenders, 6x12", Johnson*** Joints, 7½ HP motor, Complete. Eagle Industries, 108 Washington St., NYC.

***Centrifugals, Bird Rubber Covered. First Machin-*** ery Corp., 157 Hudson St., N.Y. 13, N.Y.

***Centrifuge; Sharples Super S/S. First Machinery*** Corp., 157 Hudson St., N.Y. 13.

***Disintegrator, Rietz 18 S/S; 30 H.P. First Ma-*** chinery Corp., 157 Hudson St., N.Y. 13.

***Dryer; Double Drum; '28"x5'. First Machinery*** Corp., 157 Hudson St., N.Y. 13.

***Dryer, Link-Belt Roto-Louvre, 1106-35. Heat &*** Power Co. Inc., 70 Pine St., N.Y. 5.

***Dryer, Rotary, 10'x90'x9/16". Heat & Power Co.,*** Inc., 70 Pine St., N.Y. 5. Hanover 2-4890.

***Dryer, Vacuum Shelf, 13 shelves 59"x78", Con-*** denser and pump, Consolidated Products, 18 Park Row, N.Y. 38, N.Y. BArclay 7-0600.

***Dryer, Vacuum shelf, 20 shelves, 59x78", pump,*** condenser, 6. Consolidated Products, 18 Park Row, N.Y. 38.

***Dryers, 2 Bfvk 32x90 dble. drum, SS accessories,*** complete. Eagle Industries, 108 Washington St., NYC.

***Dryers, Stainless Drum 5x10'. First Machinery*** Corp., 157 Hudson St., N.Y. 13, N.Y.

***Filters, all sizes and types. Perry Equipment,*** 1415 N. 6th St., Phila. 22, Pa.

***Filter Press, 30"x30", aluminum, 45 chambers,*** Consolidated Products, 18 Park Row, N.Y. 38.

***Filter Press, 30"x30", iron, Shriver and Johnson,*** 35-40 chambers, 6. Consolidated Products, 18 Park Row, N.Y. 38. BArclay 7-0600.

***Filter Presses, all sizes and types. Process Indus-*** tries, 305 Powell St., Brooklyn 12, N.Y.

***Granulator, Allis Chalmers, Ball, 4'6"x7', iron*** lined. Used 100 hours. Consolidated Products, 18 Park Row, New York 38, N.Y. BA 7-0600

***Kettles, Dopp C.I. 200 to 650 gal. First Machin-*** ery Corp., 157 Hudson St., N.Y. 13.

***Kettles, S/S, 300 gal. and 200 gal., 100#, WP.*** Consolidated Products, 18 Park Row, N.Y. 38.

***Kiln, Rotary, 9'6"x8'6"x200'x¾". Heat & Power*** Co., Inc., 70 Pine St., N.Y. 5.

***Mill, New Rubber Mills, 6x12, 6x14, 6x16"; John-*** son Joints, Complete. Eagle Industries, 108 Washington St., NYC.

***Mills, Raymond #5047 high side roller, ea.*** w/two 50 h.p. 3/60/2200 V motors, piping (4). Consolidated Products, 18 Park Row, N.Y. 38.

***Mills, Traylor tube, 5'x22', 5'x20', 4'6"x18'6",*** 4'x13', stone lined, pebble charge (4). Consolidated Products, 18 Park Row, New York 38, N.Y.

***Mixer, Lab, BP Vacuum, 7½ gal. jktd, MD. Com-*** plete. Eagle Industries, 108 Washington St., NYC.

***Mixer Lab.—Day S.S. Jktd. Vac. 5 gal. Equip-*** ment Clearing House, Inc., 289 10 St., Bklyn 15.

***Mixers, AMF, Glen, 340 qt., 160 qt. & 120 qt.,*** S/S bowls & beaters, AC motors, 4. Consolidated Products, 18 Park Row, N.Y. 38.

***Mixers, horiz. ribbon, 14'x7'6"x6', jktd., 600 cu.*** ft. (2). Consolidated Products, 18 Park Row, N.Y. 38, N.Y. BArclay 7-0600.

***Pebble Mills; 8'x8', Porcelain lined. First Machin-*** ery Corp., 157 Hudson St., N.Y. 13, N.Y.

***Pebble Mills 10 gal. to 800 gal., porcelain lined,*** 20. Consolidated Products, 18 Park Row, N.Y. 38.

***Propane Mixing Plant, Complete. Heat & Power*** Co., Inc., 70 Pine St., New York 5. HA 2-4890.

### For Sale

***Tablet Press, Stokes R, single punch, Consolidated*** Products, 18 Park Row, N.Y. 38.

***Tanks, S/S, from 30 to 5700 Gal. Perry Equip-*** ment Corp., 1415 N. 6th St., Phila. 22, Pa.

***Tanks, SS, from 180-10000 gal, jktd, storage,*** agtd. Eagle Industries, 108 Washington St., NYC.

***Tanks, 6500 gal. capacity, steel storage, recov-*** ered from dismantled tank cars, coiled & non-coiled. Marshall Railway Equipment Corp., 50 Church St., N.Y. 7, N.Y.

***Tanks, S.S. Storage & Mixing, all capacities.*** Process Industries, 305 Powell St., Brooklyn 12.

***Tower, S.S. Bubble Cap 72"x29'8", 21 trays. Heat*** & Power Co. Inc., 70 Pine St., N.Y. 5.

***Wood Tank, For Sale. 15' long x 4'3" wide x 4'*** deep. 3" tank grade cypress. Braces and dunnage long leaf yellow pine. Tell Manufacturing Co., Inc., 200 South Jefferson St., Orange, N.J.

***Wood Tank, For Sale, 8'4" Diameter x 12' high.*** 2" white cedar staves. 10¾" hoops, lugs and nuts. Four 4x6" long leaf yellow pine dunnage. Two 4" galvanized outlets. One 2" galvanized drain. Tell Manufacturing Co., Inc., 200 South Jefferson St., Orange, N.J.

### Wanted

***Chlorination Facilities Wanted—Rent, lease or*** buy. Need 500 to 100 gal. chlorinator ready to produce organic intermediates. Will also consider manufacturing contract. W-4312, Chemical Week.

***Machinery, Chemical and Process. Everything*** from single item to complete plant. Consolidated Products, 18 Park, N.Y. 38.

### Wanted at Once

**Chemical Equipment for Defoose Plant Work**

| | |
|---|---|
| Autoclaves | Kettles |
| Centrifuges | Mixers |
| Dryers | Presses |
| Filters | Pulverisers |
| | Tanks |

**Interested in complete plants—either now operating or idle. Give full particulars when writing.**
**W 3117 Chemical Week**
**330 W. 42nd St., N.Y. 36, N.Y.**

## MISCELLANEOUS

### Chlorophyllin Information

Patent Files—European and U.S. Including application and examiner remarks for rejected and accepted Gruskin applications.
Medical Literature—U. S. to date. European mostly 1916-1935. Translations not generally available in U.S. Many pharmaceutical products suggested. Copies for sale.

**M4321 Chemical Week**
**520 N. Michigan Ave., Chicago 11, Ill.**

## DEALERS in used-surplus

**Consolidated Products Co., Inc.**

**Oldest and Largest Dealers in Used and Rebuilt Machinery.**

**18 Park Row, New York 38, N. Y.**
**BArclay 7-0600**
**Shops: 331 Doremus Ave., Newark 2, N. J.**

**Your FIRST Source**

**NEW YORK'S**
**LARGEST STOCK**
RENTAL-PURCHASE PLAN

**FIRST MACHINERY CORP.**
**157 Hudson St., N. Y. 13**
**Phone WORTH 4-5900**

**R. Gelb & Sons, Inc.**

**Largest stock of used chemical equipment in the United States.**
**68 Years of Leadership**

**R. Gelb & Sons, Inc.**
**Union, N. J.**
**UNionville 2-4900**

## CHEMICALS & Raw Materials

### Wanted

**Chemical Service Corporation**

**WANTED — SURPLUS**
**Chemicals, Plasticizers, Solvents**
**Drugs, Pharmaceuticals, Oils**
**Pigments, Colors, Waxes, etc.**

**CHEMICAL SERVICE CORPORATION**
**96-02 Beaver Street, New York 5, N. Y.**
**HAnover 2-6970**

## PLANTS--PROPERTIES

**For Sale.**

**COMPLETE SPECTROCHEMICAL LABORATORY**

**Includes 2-meter grating spectrograph (film), projection densitometer, arc, spark and absorption source units, developing equipment, plotting table, etc. Top condition. Available for inspection.**

**FS 4205 Chemical Week**
**330 W. 42 St., New York 36, N. Y.**

## YOU TOO CAN USE

this section for the offering or seeking of business opportunities in the chemical process industries.

It makes quick, effective contact with the more than 18,000 paid readers of CHEMICAL WEEK—the chemical business men. Its circulation is concentrated among the company officials, top administrative executives, department heads in purchasing, production, sales and marketing.

This highly productive "tracers" section can go to work for you economically—only $1.30 per line for undisplayed advertising (and one half of this rate for position wanted ads) and $10.60 per column inch for the displayed style.

And it is fast—advertisements received by Wednesday morning will appear in the issue dated Saturday the following week.

If you wish any further information please write to "tracers" c/o CHEMICAL WEEK, 330 W 42nd St., N. Y. 36, N. Y.

# BOOKLETS . . . . . .

## Chemicals

**Polystyrene Plastic**
20-p. booklet reviewing the general properties, fabricating and finishing techniques, and current applications of Styrofoam, an expanded polystyrene plastic now being used for low-temperature insulation, buoyancy, and floral and decorative purposes. The Dow Chemical Co., Midland, Mich.

**Vegetable Oleic Acid**
5-p. technical bulletin describing the firm's new vegetable oleic acid, as to specifications, properties, composition, oxidation stability, and applications in soaps, carbon paper and inked ribbons, and synthetic rubber. Charts give additional stability and solubility data. Emery Industries, Inc., Dept. 5, Carew Tower, Cincinnati, O.

**Fatty Acids and Derivatives**
Reference chart indicating the composition and important physical properties of 46 processing oils and fats, the empirical formulas, molecular weights and acid numbers of 23 fatty acids, plus the boiling and melting points of many of the acids. E. F. Drew & Co., 15 East 26 St., New York, N.Y.

**Protective Coatings**
4-p. catalog covering the firm's line of protective coatings, contains a description of the physical and protective qualities of the eight company products, a review of five different types of applications as well as a listing of chemical agents resisted by the products described. Prufcoat Labs., Inc., 50 East 42 St., New York, N.Y.

## Equipment

**Dyeing Methods**
28-p. brochure summarizing current methods of dyeing many of the new synthetic fibers and blends. Synthetics noted include Dacron, nylon, Vicara, Orlon, Dynel, Saran and Fortisan. General Dyestuff Corp., 435 Hudson St., New York, N.Y.

**Teflon Packing**
Catalog covering Teflon-impregnated braided white asbestos packings (in coil or solid continuous ring form) details recommended applications and chemicals against which packing is to be used. Flexrock Co., 3668 Cuthbert St., Philadelphia, Pa.

**Plastic Rings**
Catalog sheet giving information on specifications, construction and use of plastic semi-metallic die-formed rings. Abbott & Biddle, 2417 Federal St., Philadelphia.

## General

**Safety Flares**
10-p. booklet utilizing cartoons to explain the nature and function of refinery flares. Intended for plant communities and visitors to the plant areas, the booklet also refers to the firm's atmospheric pollution control program. Esso Standard Oil Co., 15 West 51 St., New York, N.Y.

**Electrical Maintenance**
24-p. booklet presenting a maintenance program for electrical apparatus, based on the use of genuine renewal parts, repair service plants, and engineering and field service. Also covered are the subjects of motor exchange service, periodic inspection service, and "on-the-spot" repairs. Westinghouse Electric Corp., Box 2099, Pittsburgh, Pa.


**CHEMICAL WEEK • ADVERTISER'S INDEX • MAY 24, 1952**

AIR PRODUCTS, INC. ..... 55
Agency—Thoma & Gill

AMERICAN-BRITISH CHEMICAL SUPPLIES, INC. ..... 9
Agency—Richard Lewis, Adv.

AMERICAN MINERAL SPIRITS CO. ..... 44
Agency—Leo. Burnett Co., Inc.

AMERICAN POTASH & CHEMICAL CORP. 20
Agency—Charles W. Curtis, Adv.

ATLAS POWDER CO. ..... 21
Agency—The Aitkin-Kynett Co.

BAKER CHEMICAL CO. ..... 41
Agency—Wildrick & Miller, Inc.

CARBIDE & CARBON CHEMICALS CO., A DIVISION OF UNION CARBIDE & CARBON CORP. ..... 4
Agency—J. M. Mathes, Inc.

CHICAGO & EASTERN ILLINOIS RAILROAD ..... 10
Agency—Erwin Wasey & Co., Ltd.

COMMERCIAL SOLVENTS CORP. ..... 42
Agency—Fuller & Smith & Ross

CONSUMERS POWER CO. ..... 3
Agency—Commonwealth Services, Inc.

COVER, H. S. ..... 40

CROLL-REYNOLDS CO., INC. ..... 4
Agency—J. Hayden Twiss, Advertising

DAVIES NITRATE CO., INC. ..... 18

DAVISON CHEMICAL CORP., THE ..3rd Cover
Agency—St. Georges & Keyes, Inc.

DEGEN & CO., INC., GEORGE ..... 18

DIAMOND ALKALI CO. ..... 51
Agency—Fuller & Smith & Ross, Inc.

DREW & CO., INC., E. F. ..... 46
Agency—The Aitkin-Kynett Co.

EASTMAN KODAK CO. ..... 30
Agency—Charles L. Rumrill & Co., Inc.

EMPIRE TRUST CO. ..... 47

FAIRBANKS, MORSE & CO. ..... 37
Agency—The Buchen Co.

FILTROL CORP. ..... 22
Agency—Heintz & Co., Inc.

FULTON BAG & COTTON MILLS ..... 48
Agency—Herbert Rogers Co.

GENERAL AMERICAN TRANSPORTATION CORP.—WIGGINS GASHOLDER DIV. ... 45
Agency—Weiss & Geller, Inc.

GENERAL CHEMICAL DIVISION, ALLIED CHEMICAL & DYE CORP. .....Back Cover
Agency—Atherton & Currier, Inc.

HALL CO., THE C. P. ..... 39
Agency—Cruttenden & Eger, Advertising

HARDESTY CHEMICAL CO., INC. ..... 1
Agency—Terrill, Belknap, Marsh Associates

HARTE CO., JOHN J. ..... 16
Agency—Mosely, George & Woollen, Advertising

HOOKER ELECTROCHEMICAL CO. ..... 52
Agency—Charles L. Rumrill & Co., Inc.

HUDSON PULP & PAPER CORP. ..... 29
Agency—Robertson & Buckley, Inc.

INLAND STEEL CO. ..... 60
Agency—Weiss & Geller, Inc.

JOY MANUFACTURING CO. ..... 15
Agency—Walker Downing, Gen. Agency

KAY-FRIES CHEMICALS, INC. ..... 9
Agency—Richard Lewis, Advertising

KEIDING PAPER PRODUCTS CO. ..... 61
Agency—Morrison Advertising Agency, Inc.

KENNEDY CAR LINER & BAG CO. ..... 17
Agency—Grubb & Peterson

KOPPERS CO., INC. .....20-28
Agency—Batten, Barton, Durstine & Osborn, Inc.

LITHIUM CORP. OF AMERICA, INC. .... 43
Agency—F. H. Faber, Adv.

LITTLE, INC., ARTHU RD. ..... 27

MALLINCKRODT CHEMICAL WORKS .... 24
Agency—The Philip Ritter Co., Inc.

McLAUGHLIN, GORMLEY KING CO. ..... 40
Agency—Alfred Colle Co.

METALLOY CORP. ..... 43
Agency—F. H. Faber, Adv.

NATIONAL ANILINE DIVISION ALLIED CHEMICAL & DYE CORP. ..... 19
Agency—James J. McMahon, Inc.

NORFOLK & WESTERN RAILWAY ..... 59
Agency—Houck & Co., Inc.

NORTH AMERICAN CAR CORP. ..... 23
Agency—Doremus & Co.

OIL & CHEMICAL PRODUCTS, INC. ..... 30
Agency—Byrde, Richard & Pound

ONYX OIL & CHEMICAL CO. ..... 38
Agency—Spooner & Kriegel

PETROLITE CORP., LTD. ..... 2
Agency—John C. Fellows Co.

PITTSBURGH COKE & CHEMICAL CO. .. 33
Agency—Walker & Downing, Advertising

POWELL CO., THE WILLIAM ..... 56
Agency—Associated Adv. Agency, Inc.

ROHM & HAAS CO. ..... 31
Agency—John Falkner Arndt & Co., Inc.

SPARKLER MANUFACTURING CO. ..... 36
Agency—Kreiker & Meloan, Inc.

SOLVAY SALES DIVISION, ALLIED CHEMICAL & DYE CORP. .....2nd Cover
Agency—Atherton & Currier, Inc.

STAUFFER CHEMICAL CO. ..... 26
Agency—J. Hayden Twiss, Advertising

SUNDHEIMER CO., HENRY ..... 61
Agency—Givaudan Adv. Co.

UNION CARBIDE & CARBON CORP., CARBIDE & CARBON CHEMICALS CO. .... 4
Agency—J. M. Mathes, Inc.

U.S. INDUSTRIAL CHEMICALS ..... 5-6
Agency—G. M. Basford

U.S. POTASH CO. ..... 44
Agency—McCann-Erickson, Inc.

VICTOR CHEMICAL WORKS ..... 35
Agency—Cruttenden & Eger, Advertising

WELCH, HOLME & CLARK CO., INC. ..... 43
Agency—Byrde, Richard & Pound

WIGGINS GASHOLDER DIV., GENERAL AMERICAN TRANSPORTATION CORP. .. 45
Agency—Weiss & Geller, Inc.

**ADVERTISING STAFF**

ADVERTISING SALES MGR. ..B. E. Sawyer
BUSINESS MANAGER ..Albert E. Weis

Atlanta 3 .....Ralph C. Maultsby, 1321 Rhodes-Haverty Bldg.
Chicago 11 .....Alfred D. Becker, Jr. Steven J. Shaw, 520 N. Michigan Ave.
Cleveland 15 .....Vaughan K. Dissette, 1510 Hanna Bldg.
Dallas 1 ...James Cash, First National Bank Bldg.
Los Angeles 17 .....Jos. H. Allen, 1111 Wilshire Blvd.
New York 36 .....Knox Armstrong, Robert S. Muller, Charles L. Todaro, 330 West 42 St.
Philadelphia 3 ... William B. Hannum, Jr., Architects Bldg., 17th & Sansom Sts.
San Francisco 4 ..... Ralph E. Dorland, 68 Post St.
Boston 16 .....1427 Statler Bldg.
Detroit 26 .....856 Penobscot Bldg.
Pittsburgh 22 .....738 Oliver Bldg.
St. Louis 8 .....3615 Olive St., Continental Bldg.

# THIS IS THE ANSWER TO YOUR "CAKING" PROBLEMS

## DAVISON FINELY-SIZED SYNTHETIC SILICAS

Where caking is a problem, Davison finely-sized synthetic silicas offer double-action control. When such silicas are mixed with a granular or powdered product they not only add a thin but effective coating to the particles, but also adsorb the moisture or mother liquor that otherwise would accelerate caking. These Davison silicas are as small as .5 micron diameter with uniformity of structure insured by rigid production controls. They offer surface areas up to 1000 square meters per gram.

Being chemically and physically inert, they are adaptable in many varied applications. Davison finely-sized, amorphous synthetic silicas of high purity are currently being used as anti-caking agents in dyes, chemicals, insecticides, foods and pharmaceuticals. Davison's diversified experience and years of research are available to aid you in your caking problems. For additional information, specifications and samples of Davison silica gel write, mentioning your proposed application.

*Progress Through Chemistry*

**THE DAVISON CHEMICAL CORPORATION**

*Baltimore 3, Maryland*

PRODUCERS OF: CATALYSTS, INORGANIC ACIDS, SUPERPHOSPHATES, PHOSPHATE ROCK, SILICA GELS, SILICOFLUORIDES AND FERTILIZERS

If you require an economical dry

# SOURCE OF $SO_2$

***As a Reducing Agent or***
***As an Antichlor...***

Investigate this Dependable

*GENERAL CHEMICAL PRODUCT*

## ANHYDROUS SODIUM BISULFITE

**(Sodium Metabisulfite)**

**97.5% $Na_2S_2O_5$ (available $SO_2$: 65.5%)**

Leather—for chrome tanning; for bisulfiting of tannin.

In Photography—for fixing solutions.

Textiles—for bleaching wool; antichlor after bleaching with hypochlorite; rayon manufacture.

Water Treatment—as an antichlor.

Food Processing—for sulfiting fruits and vegetables.

Readily available for prompt shipment from coast-to-coast distribution points. For further information, phone or write any General Chemical office listed below.

**GENERAL CHEMICAL DIVISION**
ALLIED CHEMICAL & DYE CORPORATION
**40 Rector Street, New York 6, N. Y.**

*Offices:* Albany • Atlanta • Baltimore • Birmingham • Boston • Bridgeport • Buffalo • Charlotte Chicago • Cleveland • Denver • Detroit • Houston • Jacksonville • Kalamazoo • Los Angeles Minneapolis • New York • Philadelphia • Pittsburgh • Providence • St. Louis • San Francisco Seattle • Yakima (Wash.)

In Wisconsin: General Chemical Company, Inc., Milwaukee, Wis.

**In Canada: The Nichols Chemical Company, Limited • Montreal • Toronto • Vancouver**

BASIC CHEMICALS

GC

FOR AMERICAN INDUSTRY